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The Graded School.

A GRADED COURSE OF INSTRUCTION

FOR PUBLIC SCHOOLS:

WITH

COPIOUS PRACTICAL DIRECTIONS TO TEACHERS,

AND

OBSERVATIONS ON PRIMARY SCHOOLS, SCHOOL DISCIPLINE,
SCHOOL RECORDS, ETC.

BY W. H. WELLS, A.M.,

SUPERINTENDENT OF PUBLIC SCHOOLS, CHICAGO, AND LATE PRINCIPAL OF THE
STATE NORMAL SCHOOL, WESTFIELD, MASS.

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PREFACE.

THE Graded Course of study here presented, is substantially the Course adopted in the Public Schools of Chicago. It is believed to combine the best elements of the different systems adopted in Boston, New York, Philadelphia, Cincinnati, St. Louis, and other cities.

Most of the Directions which accompany the Course have been suggested by the author's diary of visits to the schools of Chicago and other cities; and they are designed to supply the deficiencies most frequently observed in schools, and to correct the most common faults.

The kind reception of the author's Seventh Annual Report, which embraced a large portion of the Course here presented, and the success of the system in the schools of Chicago, have induced the belief that the same Graded Course and accompanying Directions may prove acceptable to teachers in the present revised form.

For a more full elucidation of the special features of the Course, the reader is referred to the Introduction.

Several brief articles on Discipline, Records, and other topics, are appended to the Course, in the hope that they may add somewhat to its value.

W. H. W.

CHICAGO, July, 1862.

INTRODUCTION.

A GRADED SCHOOL is a school in which the pupils are divided into classes according to their attainments, and in which all the pupils of each class attend to the same branches of study at the same time.*

Number and Division of Grades.—In all cities and large towns, there are numerous transfers from one public school to another. As pupils from different schools are thus brought together, it is often found that those who are equally advanced in one

* "All the pupils in any one class attend to precisely the same studies and use the same books. In each room there will be a first and a second class, and it is important that the identical pupils which constitute the first class in one branch should constitute the first class in every branch pursued by the class. By this arrangement, while one class is reciting, the other is preparing for recitation, and an alternating process is kept up through the day, affording the pupils ample time to study their lessons, and the teacher ample time to instruct each class. . . . This is what is meant by a graded and classified school."—*Ira Divoll, Superintendent of Schools, St. Louis.*

"The due classification and grading of the schools is but the application to the educational cause of the same division of labor that prevails in all well-regulated business establishments, whether mechanical, commercial, or otherwise. It is not only the most economical, but without it there can be little progress or prosperity."—*H. C. Hickok, late Superintendent of Public Instruction of Pennsylvania.*

branch of study are very unequally advanced in other branches. This creates constant confusion and inconvenience in the classification. Hence the importance of some uniform system of gradation in all the schools of a city or town.

It is obviously unreasonable to expect one school to make the same progress, in all cases, as another more favorably situated; but it is not impracticable so to arrange the course of study, that there may be certain stand-points in it, at which the pupils shall be required to reach a given standard of attainment in all the parallel branches, and from which no one shall be allowed to advance in one branch before all the other branches are brought up to the same standard. At these particular points, it is plain that the pupils will be together in all the branches in all the schools; and if these points are made sufficiently numerous in the course, a pupil may pass from one school to any other in the city or town, at any time, and he will find some class equally advanced with himself in all the studies.

In classifying the pupils of cities and large towns, it has been found convenient to divide all that belong to the Grammar and Primary Schools into *ten grades*—four Grammar Grades and six Primary. In smaller towns a less number of grades will be found more convenient.

In order to give efficiency and value to a graded course of study, it is important that the divisions between the successive grades should be plainly and sharply defined. Special cases may sometimes occur, in which it will be necessary for a time to relax

the stringency of this rule; but these cases should be made as few and brief as possible.*

In the course herewith presented, the number of pages or chapters belonging appropriately to each grade, can not be given with exactness, since the text-books adopted in different cities and towns do not always correspond, either in the number of volumes or in the extent to which the subjects are carried. The divisions of the several branches in the present course, are made as definite as the circumstances will allow. They are the result of systematic experiments extending over a period of several years, together with a careful study of the classification adopted in a large number of cities and towns.

No pupil should be advanced from one grade to another, till he has first sustained a thorough and satisfactory test-examination on all the branches of the grade from which he is to be transferred. These examinations by the Superintendent or Principal, at frequent and regular periods, comparing the attainments of each grade with a fixed and known standard, will try every teacher's work, and award to the most deserving the credit which justly belongs to them.

General Directions accompanying the Graded

* "Other things being equal, the closer the classification the better the school system."—*H. F. Cowdery, Superintendent of Schools, Sandusky, Ohio.*

"The advantages of the union school arise chiefly from the grading. The more perfect, therefore, the grading, the more certain and marked will be the success of these schools."—*J. M. Gregory, State Superintendent of Schools, Michigan.*

Course.—Of the large body of teachers engaged in public schools, many of whom are inexperienced, and all of whom are controlled, in a greater or less degree, by habits formed under a variety of different influences, it is not to be expected that all will reach the same standard of excellence, nor is it desirable that all should attempt to reach this standard in precisely the same way. The individuality of each teacher must be preserved, and his originality and invention should be constantly tasked. There are, however, certain principles which belong to every good system of instruction, and the teacher who claims the privilege of rejecting these because he thinks he can teach better in some other way, is an unworthy member of the profession.

Public-school teachers are as faithful and progressive as any class of persons in the community, and yet cases will constantly occur in every city and town, in which suggestions repeatedly given by School Directors and Superintendents, are repeatedly forgotten. The power of habit is strong, and will, in many cases, reassert its claims even against the best intentions to resist it; and there are always some whose sympathies are not fully enlisted in their work, and who need to be admonished by a uniform standard of duty, kept always before them.

In preparing these directions and observations, the mere correction of errors has not been my highest object. I would fain hope that they may be the means of aiding all classes of teachers in their efforts to introduce improvements and advance the standard of excellence in their modes of instruction. I

have taken special care to give no directions that will check the enterprise of progressive teachers, and I believe that no one will be found to act *against* any thing except positive errors and inferior methods of instruction.

On the various and somewhat numerous points to which these suggestions relate, they are offered as a substitute for a constant visit from Superintendents and School Directors.

Practicalness in Teaching—Oral Instruction.—The regular course of school studies, in most cities and towns, is already sufficiently extended, and yet it is notorious that pupils leave the public schools lamentably deficient on a great variety of subjects connected with a sound practical education.

It is found impracticable to introduce the study of physiology in the Grammar Divisions, with an additional text-book and a course of daily recitations; and so most of the pupils complete their course without any knowledge of the important functions of the lungs and heart, and the general laws of health. We can not add the study of mineralogy and geology to the course; and pupils go out from the schools without any satisfactory knowledge of the materials employed in constructing the flagstones on which they walk. We can not introduce natural philosophy; and most pupils leave without any definite knowledge of the principle involved in rowing a boat, or even in floating it. We can not add chemistry; and pupils leave without being able to explain the rising of a loaf of bread, or the burning of a common fire.

And yet, a careful study of the philosophy of education will show, that the schools are all this time suffering for the want of the relaxation which would be afforded by a systematic course of oral instruction, exactly suited to supply these important deficiencies.*

A series of oral lessons, occupying fifteen minutes a day, and continued through the entire course of the Grammar Department, would be sufficient to embrace a wide range of practical exercises in common philosophy, and common things. Such a course of lessons would introduce an agreeable variety, without interfering with the successful prosecution of the other branches. If called up at the right

* "Nor need any one fear that the use of object lessons will diminish the amount of book-learning that will be acquired by the pupils. On the contrary, experience proves that the little child will learn to read faster and better, under a course of instruction such as proposed, while the older pupils will go forward with more intelligence and ease, when the theoretical statements of the textbooks are prepared for and illustrated by the plain facts of sense. All teaching in our schools would gain both in vividness and value if a more frequent appeal were made from the facts as stated in books to the facts as they are exhibited in the world without. . . . Our knowledge of the nature and uses of common things and our skill in common affairs—that knowledge and skill which constitute the implements of our daily work and influence—are obtained not from books, but from the action of our senses and the exercise of our individual powers."—*J. M. Gregory, Superintendent of Public Instruction, Michigan.*

"Oral training lessons, in natural science and the arts, are found to be not merely a highly intellectual exercise, but are valuable to persons in every rank of society. . . . Children of both sexes should be exercised daily on some point of science or the arts, particularly in relation to ordinary life and common things."—*David Stow, Founder of Glasgow Normal Training Seminary.*

time, it would infuse new life and vigor in the classes, and prepare them to do more in the time that remains, than they would otherwise accomplish even with the additional fifteen minutes.

In many cities and towns, considerable attention is already given to *object lessons* and other conversational exercises, in the *Primary Divisions*. In some schools these elementary object lessons are admirable, and could hardly be improved;* but it is probably true that in a majority of cases, where object teaching is introduced, the teachers do not attempt any thing like a systematic and progressive course of lessons, while many teachers conduct these exercises without any definite object in view.

Instruction by *object lessons* is a method comparatively new in this country, and many teachers do not know how to set themselves at work. The subjects are often selected in the upper grades without any regard to the topics already discussed in the grades below; and some teachers seem to think that they have given a satisfactory *object lesson*, when they have conducted a free conversation on some common subject, even though the children may not have gained one new idea of the properties and relations of objects, nor learned the use of a single new word.

In the course of instruction herewith presented, I

* In Oswego, N. Y., the Pestalozzian system of object teaching is fully and successfully introduced in all the Primary Schools. The system herewith presented was adopted in the Chicago schools in March, 1861. Many of the principal features of the course were adopted as early as 1857.

have endeavored to digest a pretty full outline of a systematic and progressive oral course, embracing object teaching, moral lessons, and other conversational exercises, and extending through all the Grammar and Primary Grades.* It has been a leading object with me to supply in this oral course the lack of *practicalness* to which I have already alluded. Though necessarily confined to the limits of a mere syllabus, and not designed to relieve teachers from the labor of making special preparation for the daily lessons,† I trust it will be found sufficiently full to guide even inexperienced teachers in the selection and arrangement of topics, and in the general method of treating them. References are made to some of the principal sources of information on the various subjects introduced, and other sources will occur to teachers as they have occasion to employ them.

* "Object lessons should not only be carried on after quite a different fashion from that commonly pursued, but should be extended to a range of things far wider, and continued to a period far later than now. They should be so kept up during youth, as insensibly to merge into the investigations of the naturalist and the man of science."—*Herbert Spencer*.

† "It will always be found true that whatever method saves the teacher from the burden of thinking, prevents the pupils from realizing the most valuable results of education,—correct habits of thought, and a well-disciplined mind."—*New York School Report*.

COURSE OF INSTRUCTION
FOR A GRADED SCHOOL,
EMBRACING THE
GRAMMAR AND PRIMARY DEPARTMENTS;
WITH
ACCOMPANYING DIRECTIONS TO TEACHERS.

NOTE.—The *Regular Course of Instruction* and the *Directions to Teachers* are preserved distinct from each other, in different sizes of type, and each is complete in itself. For convenience of reference, the directions are numbered consecutively through the course.

All the directions designed to be consulted with any grade, are either found in connection with the *regular course* for that grade, or they are referred to directly by numbers.

GENERAL DIRECTIONS FOR ALL THE GRADES.

§ 1. *Reading*.—Teachers should adhere rigidly to the rule, that no reading lesson is to be left till the pupils understand the meaning of every word contained in it, and are able to express that meaning in their own language. When definitions are given by the author, in connection with the lesson, the pupils should be required to give other definitions of their own, or modify those of the author, so as to satisfy the teacher that the real meaning is comprehended. It is highly important that pupils should not only understand the meaning of words when taken by

General Directions.

themselves, but that they should also understand their meaning and use in connection with other words. For this purpose, they should often be required, after giving the definition of a word, to embody it in a short sentence. Even this exercise falls short of the highest end of intellectual reading. Pupils should often be called on to explain the import of phrases, and sentences, and even of whole paragraphs.* Explanations and illustrations should also be added by the teacher; but let it ever be borne in mind, that an explanation drawn from the scholar is of far more value to him than the same explanation furnished by others.

While examples are constantly occurring in which pupils do not read "with the understanding," there is also an opposite fault that is equally to be shunned. Some teachers seem to suppose that the principal object of a school exercise in reading, is to understand the meaning of the piece read. This is a mistake. The principal object is to read the piece so as to *express* that meaning. The sense of the piece must be studied then, not in this case as an *end*, but as a *means* to enable the pupil to execute the read-

* "From the moment that a child knows the powers of the letters, and readily associates with the written form the pronunciation which it represents, his attention should be directed to the ideas. His progress in the art of reading should be regulated by his intellectual progress. The power of reading different words should not anticipate his power of understanding them. The habit, early acquired, of associating the ideas with their written signs, will secure his acquisition of the art of reading, and make it a delightful occupation."—*Marcel*.

Reading.

ing successfully. This being the case, it is obviously a great fault to spend half or three-fourths of the hour allotted to a reading lesson, in discussing the meaning of words and the general sense of the passages read.

While a class is engaged in reading, it should receive the undivided attention of the teacher. If the teacher is necessarily called away, by all means suspend the exercise. It is far better to omit a lesson altogether, than to leave the pupils to read by themselves.

The voice of the teacher should be frequently heard in every reading exercise, as an example for the scholars to imitate. It is by imitation that children learn to talk, and their skill and accuracy in reading will depend mainly upon the character of the models which are brought before them. A child may make a dozen trials in reading a sentence, and not only fail every time, but read it worse and worse, if he does not hear it read correctly by the teacher or by some member of the class.

The use of capitals and italics, marks of punctuation, quotation points, and all other marks employed in the reading lessons, should be learned as fast as examples present themselves.

Teachers should be particularly on their guard against adopting unsatisfactory modes of teaching this important branch, and allowing them to be confirmed into habit. In conducting classes over the same ground from term to term, and from year to year, some teachers lose their interest in the exer-

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cise, and fall unconsciously below their own previous standard. A good method must be secured by effort and retained by effort. Effort relaxed always leads to retrogression.

§ 2. *Spelling*.—In conducting oral exercises in spelling, pupils should pronounce each word distinctly before spelling it, and they should never be allowed to try twice on a word.* Whenever a pupil misses a word, let him afterward be required to spell it correctly. This may be done as soon as the correction is made in the class, or deferred till the close of the recitation.

In giving out the words to a class, teachers sometimes commit the error of departing from the ordinary pronunciation, for the sake of indicating the orthography. Thus in the word *variance*, the vowel in the second syllable is given very distinctly as long *i*, to show that the letter is *i* and not *e*. The words should in all cases be pronounced exactly as they are pronounced by a correct reader.†

As pupils are constantly liable to misunderstand the pronunciation of words, it is a very useful practice, in all written exercises, to call on some pupil in the class to repronounce each word distinctly, as soon as it is pronounced by the teacher.

* "One trial is better than a score of guesses, both to decide whether the pupil has mastered the lesson, and to insure its study in future."—*B. G. Northrop, Agent Massachusetts Board of Education.*

† "An undue emphasis, or prolongation of the utterance of a syllable, may enable the scholar to spell the word as pronounced, but will never make him an expert speller of words as properly spoken."—*Northend.*

Spelling.

Special attention should be given to syllabication, in connection with both written and oral spelling. In oral spelling, pupils should syllabicate in all cases, as in the following example: *a-m am, p-l-i pli, ampli, f-y fy, amplify*. In written spelling, it may not be necessary to syllabicate at every recitation; but in a portion of the exercises, even in written spelling, pupils should be required to divide the syllables, and failures should be marked as errors.*

Teachers should bear constantly in mind, that unless habits of correct spelling are formed early, there is very little probability that they will ever be acquired.

However thorough the drill in spelling may be, from the lessons of the speller and reader, every teacher should have frequent and copious exercises in spelling words from other sources. These should be words in common use, chosen as far as possible from the range of the pupil's observation, including the new words that arise in object lessons, and in geography, arithmetic, grammar, etc. The more difficult of these words should be written in columns on the blackboard, and studied and reviewed with the same care as lessons from the speller and reader. Failures in spelling these words should be marked with errors, the same as failures in any other lessons.

Teachers should put forth their best efforts, especially in primary classes, to secure the attention of

* "If this division of words into their proper syllables is to be learned by itself, it will be found an enormous labor; but if learned while spelling, it will hardly add any thing to that task."—*Mann*.

General Directions.

the pupils, and render the lessons as interesting as possible. Occasional exercises in "choosing sides," when properly conducted, may be made highly useful. The exercise of "spelling down" a class may also be resorted to occasionally with good effect.

If a teacher finds at any time, while conducting an oral exercise in spelling, that a portion of his class are becoming listless, he can easily recall their attention by the following simple measure: The whole class pronounce distinctly the word given by the teacher, as *notation*; then one scholar says *n*; the next *o*; the next pronounces the syllable *no*; the next says *t*; the next *a*; the next *ta*; the next *nota*; the next *t*; the next *i*; the next *o*; the next *n*; the next *tion*; then the whole class pronounce the word *notation*.

Another useful method is to read a sentence of reasonable length, and require the members of a class to spell the words in order; the first scholar spelling the first word, the next scholar the second, and so on to the end.*

§ 3. *Writing*.—Writing should be taught as a simultaneous class exercise, all the members of the class attending to the same thing at the same time.†

In conducting exercises in writing, teachers should

* For other directions respecting exercises in spelling, both written and oral, teachers are referred to Northend's Teacher's Assistant.

† The advantages of this system of teaching, over that in which different pupils of a class are allowed to write from different copies or in different books, at the same time, have been fully demonstrated in the schools of Boston, Chicago, and other cities.

Writing ; Concert Exercises.

make constant use of the blackboard. Important letters and principles of the copy should be written on the board, both correctly and incorrectly, illustrating the excellences to be attained and the errors to be avoided. Teachers who are not accustomed to this mode of illustrating, will find that they can easily qualify themselves to introduce it.*

Many teachers who excel in imparting a knowledge of other branches, teach penmanship only indifferently well. Teachers who have little taste for this exercise should discipline themselves to increased effort. Even a poor writer may make a good teacher of penmanship; and no one who attempts to teach writing is excusable for not teaching it successfully.†

Exercises of special excellence should receive marks of special credit; and deficiencies resulting from carelessness or indifference, should in all cases receive marks of error and affect the scholarship averages as much as failures in any other lessons.

§ 4. *Concert Exercises*.—In all the lower grades of

Reference.—§ 4. Barnard's Object Teaching, Art. 13.

* "Where the best results were produced, the blackboard was in constant use, and a whole section of pupils wrote the same copy at the same time. In some divisions, the blackboard did not seem to be used at all in teaching this branch. Such a neglect shows a want of competency, or a want of faithfulness on the part of the teacher."—*Report of Boston School Committee*.

† "A bad handwriting ought never to be forgiven; it is shameful indolence; indeed, sending a badly-written letter to a fellow-creature is as impudent an act as I know of."—*Niebuhr*.

General Directions.

the Primary Department, brief concert exercises should be introduced, as often as once a day, in connection with reading, spelling by letters, spelling by sounds, arithmetical tables, etc.; but they should in no case occupy more time than the individual exercises. They are only means to an end; not the end itself. Their proper use is to aid in securing the success of individual efforts. Frequent concert exercises should also be introduced in connection with reading, in the upper divisions of the Primary Department, and in all the divisions of the Grammar Department.

Great care should be taken, in all concert exercises, to secure free and natural tones of voice. It is always better to dispense with exercises in concert, than to have them become a means of forming bad habits in modulation and inflection.

§ 5. *Rapid Combinations in Arithmetic.*—Classes in Arithmetic should have frequent extemporaneous exercises in combining series of numbers, involving the principles which they have gone over. These numbers should be given by the teacher, slowly at first, and afterward with more and more rapidity, as the pupils are able to carry forward the computations. The following is an example: Take 5, add 3, add 10, subtract 9, multiply by 8, add 20, add 8, subtract 40, divide by 10,—result? Those who are prepared to answer raise the hand, and the teacher calls on one or more of them individually, for the answer, or on all together. Exercises of this kind should be commenced as soon as pupils are able to

Good Language.

add simple numbers together, and continued through the entire course. Similar examples may occasionally be carried rapidly round a class, each pupil giving in turn the result for one step of the process, with as little delay as possible.

§ 6. *Good Language. Composition.*—Teachers should be watchful on all occasions, and especially during recitations, to secure habits of readiness and precision in the use of language. Every question should receive a complete and grammatical answer. Teachers should be clear and accurate in their own expressions, and impress upon their pupils the importance of selecting at all times the best words and phrases, and forming the *habit* of using good language in early life. As fast as new words are learned in the various oral exercises, the children should be required to embody them in spoken or written sentences, and thus fasten their meaning and uses securely in the memory.*

Reference.—§ 6. Manual of Elementary Instruction, vol. 2, article, *Language*.

* “Great attention should be given to the language used in the school-room, both by teachers and pupils. It should be pure English, free from all provincialisms; and the construction of the sentences should be grammatical. It is of the utmost importance that the teachers of our Primary scholars should be accurate in the use of language; quick to notice, and prompt to correct all “bad grammar” heard in their school-rooms. No *slang*, no useless expletives, no unnecessary repetitions, no obsolete words, no violations of orthography or syntax, should, at *any time*, or under any circumstances, be allowed to pass without careful correction. The power of expression may be cultivated by “Object Lessons” and

General Directions.

Exercises in composition may be introduced in such a manner, that pupils will never regard them as irksome tasks. With proper care and skill on the part of the teacher, they may be made as interesting and attractive as any of the exercises of the school. The following are some of the first steps that may be taken to secure this object :

(1.) Let the pupil take his slate to a window during a recess, and write down any thing that he hears from the children in the play-ground. At the close of the recess, let him read before his class what he has written, and he will be interested to learn that the

conversation. Pupils should also be advised and required to write much. Recitations may sometimes be conducted by writing, and will be found mutually profitable. Questions should be pointed and precise ; answers should be concise and exact. Every answer should embrace a complete proposition. Frequently the pupil gives the answer only in part. Every exercise, and every recitation should be so conducted as to habituate the scholars to correct, terse, and elegant modes of expression. All indistinctness of utterance, all clipping of words, all hesitancy of speech, should at once be noticed and the proper remedies faithfully applied."—*J. G. McMynn*.

"*Conversational Lessons*.—One great object in early education should be to awaken the mind of children to activity, and to furnish them with language. Conversational lessons are well calculated to effect these objects, inasmuch as they accustom children to speak of things they daily see and use ; leading them to make their own observations upon such things, and in their turn to ask for further information.

"These lessons are of course conducted without any formality, and do not require any particular hints. The subjects chosen are very simple, and the teacher ought to be quite easy and familiar, letting the children take the lead ; merely stimulating them by judicious questioning."—*Manual of Elementary Instruction*.

Morals and Manners.

sentences from the different scholars are so many little compositions. He will then understand, that every time he speaks a sentence, he makes a composition, and if he will only write it on his slate or on paper, it will be a written composition.

(2.) Select a common and familiar subject, as a horse, and ask the pupil various questions respecting it. As he gives his answers, let him write them down on his slate. He will soon find that he has written an original composition, almost without effort.

(3.) At the close of an object lesson on any familiar subject, let the pupils write or print on their slates every thing they can remember of the description that has been given, and read their exercises in turn before the class.

These different exercises should be examined carefully by the teacher, and the errors that occur in language, orthography, punctuation, etc., should be kindly pointed out and corrected before the class. The pupils should then be required to rewrite their exercises correctly.

The establishment of a school paper, sustained by the pupils, under the general direction of the teacher, is one of the best means of cultivating this important art.

§ 7. *Morals and Manners*.—Love to parents and others, friendship, kindness, gentleness, obedience,

References.—§ 7. Calkins's Object Lessons; Cowdery's Moral Lessons, and Cowdery's Primary Moral Lessons; Barnard's Object Teaching, arts. 7, 9, and 12; Hooker's Natural History, chap. 36; Willson's Third Reader; Barnard's Journal of Edu-

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honesty, truthfulness, generosity, self-denial, neatness, diligence, etc., are cultivated in children, not so much by direct exhortation and formal precept, as by resorting to expedients that will call these affections and qualities into active exercise. Lead a child to do a kind act, and you will increase his kindness of heart; and this is the best of all lessons on kindness. Let teachers ever remember that the *exercise of virtuous principles, confirmed into habit*, is the true means of establishing a virtuous character.

Little anecdotes and familiar examples, illustrating the love of brothers and sisters, the respect due to the aged, kindness to animals, mutual love of companions and associates, benevolence, etc., are among the best means of cultivating these virtues. Such a work as "Cowdery's Moral Lessons," teaching mainly by examples, will accomplish far more than the same principles when abstracted from the narratives in which they are found, and embodied in a formal catechism of moral instruction.*

Teachers should frequently read to their divisions short, entertaining narratives, and make them the subjects of familiar and instructive conversations with their pupils. So also in lessons on animals, trees, and all the works of nature, opportunities should be constantly improved to show the wisdom,

cation, vol. 1, art. 10; Dwight's Higher Christian Education; Hall's Manual of Morals; Mayhew's Popular Education, chap. 8.

* "Nature, reason, and experience proclaim this order, *example before precept*." — *Marcel*.

Morals and Manners.

power, and goodness of the Creator, and to inculcate the reverence that is due to Him, and a sense of dependence upon Him.

Every case of quarreling, cruelty, fraud, profanity, and vulgarity, should be made to appear in its true light. The selfishness of children is the greatest obstacle to moral training. To moderate this strong instinct, to teach self-denial and self-control, must be the constant care of the teacher.

There is no time when the watchfulness of the teacher is more necessary than during the recesses and other hours of relaxation at school. This is the time when little differences are most likely to spring up, and bad passions to gain the ascendancy. No parent's eye is upon the children, and yet they should constantly feel that some kind guardian is near—not to check their cheerful sports, but to encourage every kind and noble act, and to rebuke every departure from the path of virtue and honor.*

* "Let the play-grounds never be left without the supervision of a teacher when the pupils are there. To accomplish this, they should not be opened to pupils till a fixed hour, when the teacher should be present. If the recesses, also, be given to both sexes at once, the teacher may go with his pupils on to the play-ground, and while he encourages the cheerful hilarity of the games, his presence will hold in awe the quarrelsome spirits or profane lips, which will otherwise work so much evil. It is the unwatched and unrestrained association of the pupils, good and bad, upon the play-ground, that forms one of the most fruitful sources of moral corruption. Remove this, and we have abated, at one blow, more than one half of the dangers that attend our schools."—*J. M. Gregory, State Superintendent of Public Instruction, Michigan.*

See also Young's Teachers' Manual.

General Directions.

Good morals are intimately connected with *good manners*, and teachers should improve every opportunity to inculcate lessons of civility and courtesy. In the Primary divisions, especially, the teachers should give frequent and somewhat minute directions respecting the ordinary rules of politeness. Let the pupils be taught that when a question is asked them, it shows a lack of good breeding to remain silent or shake the head, even if they are not able to answer it. They should receive some general directions respecting the manners of younger persons in the presence of those who are older. They should be taught that well-bred persons seldom laugh at mistakes, etc. The manners of the children in their intercourse with each other before and after school, and at the recesses, and in going to and from school, should receive the constant and watchful care of the teacher.

§ 8. *Oral Exercises*.—The oral lessons of the course are not intended to be exhaustive and complete; but they present a pretty full outline of most of the exercises that should be introduced. This outline should be filled out, and, in most cases, extended by the teachers; but none of the subjects introduced should be omitted.

“In every exercise, it is of the highest importance that there should be some definite aim and purpose,

References.—§ 8. Calkins's Object Lessons, pp. 291-348; Barnard's Object Teaching, arts. 2 and 12; Hailman's Object Teaching.

Oral Exercises ; Reviews, etc.

and that the teacher should work with reference to obtaining certain results.”*

The oral lessons of the Grammar divisions are designed to occupy an amount of time equal to about fifteen minutes a day. This will be found more than sufficient to present all the topics introduced.

An outline of each oral exercise should be written out and preserved for review. This may be done by the teacher on the blackboard, or by the pupils on slates or paper, as the exercise progresses ; or the pupils may be required to write it out from memory immediately after the close of the lesson.

§ 9. *Reviews and Abstracts.*—The time devoted to reviews, both oral and written, should be very much increased.†

Each lesson should be made, to some extent, a review of the previous lesson, without, however, consuming very much time, except in cases in which the previous recitation has been unsatisfactory. Pupils should understand that they are liable to be called on to recite any portion of the previous lesson,

* “Oswego Report.”

“The order in which the various impressions of objects and other facts connected with them should be considered, depends, to a great extent, on the knowledge which the pupil has already of the object.

“The following are the principal facts to be considered, though not always in the order given, in the various objects: 1. *Name*; 2. *Place*; 3. *Touch, Sound, Odor, Taste*; 4. *Color*; 5. *Shape*; 6. *Size*; 7. *Material, Uses, etc.*”—*Hailman's Object Teaching*.

† “The great secret of being successful and accurate as a student, next to perseverance, is the constant habit of reviewing.”—*Todd's Student's Manual*.

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and questions enough should be asked in review to make it necessary for them to read over the last lesson before coming to the recitation, unless their previous preparation has been sufficient to fasten it in the memory.

The oral lessons should, in most cases, be reviewed more than once, and in all cases till they are thoroughly learned and remembered.

In most of the studies in which the recitations occur daily, one lesson of each week should be a review of the four preceding lessons. Classes reciting only two or three times a week may have a review every second week; and there may be a few exceptional cases in which it will be best to have these reviews only once a month.*

In the Primary divisions, the reviews will necessarily be oral; but in the Grammar divisions they should be both oral and written. In the 1st, 2d, and 3d grades, most of the classes should have at least one written review in a month, besides the oral reviews.

It may be well, occasionally, to devote an hour to a written review of all the different branches, in one exercise, selecting ten or more questions promiscuously from all the studies of the class.

In the five upper grades, all the classes should have occasional exercises in writing a few lines of

* "The regulation recently adopted by the Board, requiring a weekly review of every class by its teacher, without the use of books, can not fail to accomplish much good, and encourage a more intelligent system of teaching."—*New York Report*.

Reviews and Abstracts.

prose or verse, dictated orally by the teacher, as a test of their proficiency in spelling, punctuation, use of capitals, penmanship, etc. In the 4th and 5th grades, the pupils may use either pen or pencil, at the discretion of the teacher; but in the 1st, 2d, and 3d grades they should be required in all cases to use a pen. These exercises should be strictly extemporaneous, and every paper should be passed to the desk at the close of a specified time.

In conducting written reviews, great care should be taken to remove from the pupils, so far as possible, all temptation to seek assistance from books, or papers, or classmates. When two pupils of the class are seated at the same desk, it is often desirable to have two sets of questions of about equal difficulty—one set for all the pupils sitting at one end of the desks, and one for those sitting at the other end.

Written reviews are among the most successful means that can be employed for securing thoroughness and accuracy of scholarship. They afford a reliable test of the pupil's knowledge of the subject, cultivate habits of freedom and accuracy in the use of language, and afford a valuable discipline to the mind, by throwing the pupil entirely upon his own resources.

In addition to the written reviews, teachers of the higher divisions should require frequent written exercises in connection with the daily recitations in history, grammar, arithmetic, etc.

All written reviews, abstracts, etc., should pass under the critical examination of the teacher; the

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important errors should be corrected; and pupils presenting papers carelessly written, should be required to rewrite them.

§ 10. *Number of Classes in a Division.*—As a general rule, the pupils assigned to each teacher in the Grammar Department, should be divided into two classes; in the 5th, 6th, 7th, and 8th grades, into three classes; and in the 9th and 10th grades, into four.

The number of pupils in a division, or other circumstances, may make it desirable, in certain cases, to depart from this arrangement.

It is desirable that each class in the Grammar Department should not number more than 20 or 25 pupils, and each class in the lower grades not more than 10 or 15 pupils; but this arrangement is impracticable where a division numbers more than 40 or 50 pupils.*

§ 11. *Number of Branches to be pursued at a time.*—It requires the constant watchfulness of teachers to prevent pupils from undertaking too many branches of study at a time. Pupils should rarely be allowed to study more than three branches at once, besides reading, spelling, and writing; and it is generally better to have some of the lessons come only on alternate days than to have even the six exercises in one day.

* “In a large class, each of whom seldom, and at best only for a short time, receives individually any attention from the teacher, the progress is slow, the faculties little developed, and the education altogether very imperfect.”—*Reid's Principles of Education*.

Order of Exercises, etc.

§ 12. *Order of Exercises and Length of Recitations.*—Every teacher should have posted up in the room an established order of exercises for each day in the week, assigning a definite time for the beginning and ending of every exercise, and of every interval between the exercises.

It is impracticable to establish a uniform rule respecting the frequency and length of recitations. The following scale will serve as a general guide to teachers in this matter :

Recitations in the Grammar Department from twenty-five to forty minutes in length, except exercises in spelling, which may usually be completed in fifteen to twenty-five minutes ; in the 5th, 6th, and 7th grades, from twenty to twenty-five minutes ; in the 8th and 9th grades, from fifteen to twenty minutes ; and in the 10th grade, from ten to fifteen minutes.*

* "From four to five lessons a day for a Primary school, is better than six, even for mental proficiency. A Primary school that has even five hours of session per day should have an hour or more of interval at midday. Besides, there should be one or two recesses during each session. The exercises of the school should be so arranged as to give a change of position and subject as often as every fifteen or twenty minutes. No child will give sufficient attention to derive much benefit from a lesson that continues more than twenty minutes. Five and ten minute lessons, on some subjects, are better than longer ones. Lessons occupying different senses should follow each other, as the change affords relief to the mind."

—*N. A. Calkins.*

The following is the programme of exercises for two days of the week, in one of the Primary schools of Oswego, N. Y. It includes only the pupils of a single teacher, in the upper Primary grades,

 General Directions.

§ 13. *Frequency of Recitations.*—The following arrangement will serve as a general guide, but cases may sometimes arise in which it will be necessary to depart from it: Classes in the 1st grade, two or three times a week; in the 2d and 3d grades, three or four

and is introduced here to show the minuteness of detail, the range of topics, and the arrangement and distribution of time and subjects, that have been adopted in a city that is distinguished for the excellence of its school system :

MONDAY.

- 8.30 to 8.45—Opening Exercises.
- 8.45 to 8.55—Moral Instruction.
- 8.55 to 9.15—Reading, B, subd. 1.
- 9.15 to 9.20—Gymnastics.
- 9.20 to 9.35—Lessons on Number, B, subd. 2.
- 9.35 to 9.45—Recess.
- 9.45 to 10.00—Lesson on Place, A class.
- 10.00 to 10.25—Reading, B, subd. 2.
- 10.25 to 10.30—Gymnastics.
- 10.30 to 10.50—Lesson on Number, B, subd. 1.
- 10.50 to 11.00—Recess.
- 11.00 to 11.20—Reading, A class.
- 11.20 to 11.40—Writing on slates, B, subd. 1.
- 11.40 to 12.00—Lesson on Number, A class.
- 12.00 to 2.00—Intermission.
- 2.00 to 2.20—Lesson on Number, A class.
- 2.20 to 2.30—Lesson on Animals, A and B.
- 2.30 to 2.35—Gymnastics.
- 2.35 to 2.55—Reading, B, subd. 2.
- 2.55 to 3.10—Lesson on Number, B, subd. 1.
- 3.10 to 3.15—Calling Roll.
- 3.15 to 3.30—Recess.
- 3.30 to 3.45—Spelling, A class.
- 3.45 to 4.10—Reading, B, subd. 1.
- 4.10 to 4.30—Reading, A class.
- 4.30—Dismission.

Frequency of Recitations.

times; 4th grade, four or five times; 5th and 6th grades, five to eight times; 7th and 8th grades, eight to ten times.

Slate arithmetic, three or four times a week; mental arithmetic, in 4th and 5th grades, four or five times a week; in 3d grade, three or four times; in 2d grade, two or three times. Numbers, in five lowest grades, five times a week.

TUESDAY.

- 8.30 to 8.45—Opening Exercises.
- 8.45 to 9.00—Lesson on Form, B, subd. 2.
- 9.00 to 9.15—Lesson on Weight, B, subd. 1.
- 9.15 to 9.20—Gymnastics.
- 9.20 to 9.35—Spelling, A class.
- 9.35 to 9.45—Recess.
- 9.45 to 10.10—Reading, B, subd. 2.
- 10.10 to 10.20—Drawing, B, subd. 1.
- 10.20 to 10.25—Gymnastics.
- 10.25 to 10.50—Lesson on Number, B, subd. 1.
- 10.50 to 11.00—Recess.
- 11.00 to 11.15—Lesson on Objects, A class.
- 11.15 to 11.35—Reading, B, subd. 1.
- 11.35 to 12.00—Lesson on Number, A class.
- 12.00 to 2.00—Intermission.
- 2.00 to 2.15—Lesson on Number, B, subd. 2.
- 2.15 to 2.30—Drawing, A class.
- 2.30 to 2.35—Gymnastics.
- 2.35 to 2.55—Reading, B, subd. 1.
- 2.55 to 3.10—Lesson on Weight, B, subd. 2.
- 3.10 to 3.15—Calling Roll.
- 3.15 to 3.30—Recess.
- 3.30 to 3.45—Lesson on Number, A class.
- 3.45 to 4.00—Lesson on Form, B, subd. 1.
- 4.00 to 4.10—Spelling, A class.
- 4.10 to 4.30—Lesson on Number, B, subd. 1.
- 4.30—Dismission.

General Directions.

Geography, from three to five times a week.

History, three or four times a week.

Grammar from three to five times a week.

Spelling, in 1st grade, two or three times a week ; 2d and 3d grades, three or four times ; 4th grade, four or five times ; all grades below the 4th, eight to ten times.

Writing, in the Grammar divisions, two or three times a week ; in the 5th and 6th grades, four or five times. See § 14.

§ 14. *Division of Time and Labor.*—In deciding what proportion of time should be given to spelling by letters, what to spelling by sounds, to reading, to numbers, to geography, etc., the rule should be this : whenever a class is less advanced in one branch assigned to the division than in other branches, let that particular branch receive special attention till it is as familiar as the others. It is very common to find a class more advanced in reading than in numbers, and still devoting less attention to arithmetic than to reading ; the observance of this rule will correct all such errors.

§ 15. *Rhetorical Exercises.*—The first five grades should devote about one hour every Friday afternoon, to exercises in composition, declamation and recitation, and reading select pieces. The same course may be adopted in the other divisions, when the convenience of rooms and other circumstances permit.

In the 1st and 2d grades, every pupil should be required to take a part in both the elocutionary and

Rhetorical Exercises.

the composition exercises, as often as once a month. When pupils have important written abstracts or other similar exercises to prepare, these may in certain cases be accepted as equivalents for the regular compositions. There may also be instances in which it will be best to accept the reading of a piece of poetry or other selection, as an equivalent for a declamation or recitation; but in all ordinary cases it is better even for the girls to commit to memory the pieces which they recite.*

* “*The Recital*.—Akin to the debate, we have introduced another exercise which, for want of a better name, is termed the RECITAL. The primary object is to cultivate the power of clothing thought in appropriate language, and of presenting it in an easy, colloquial style, to a company of listeners. The pupil may select for a topic any thing that will require a description. It may be an event in history, a brief biographical sketch, the relation of current events, or a good story. The subject-matter for a *Recital* may be obtained, after reading a book, by forming a synoptical outline of the same, detailing the more interesting portions with a proper degree of minuteness. Among the topics which have been thus presented, are the following: ‘SIR JOHN FRANKLIN,’ in which was given a brief sketch of his life, explorations, loss, expeditions sent in search of him, and the discovery of his remains; ‘Account of Lady Esther Stanhope,’ ‘Grace Darling,’ ‘The Sack of Rome,’ ‘Aaron Burr,’ etc.

“The exercise is equally adapted to both sexes. While it furnishes many of the advantages of the debate, it affords others of equal value. It accustoms the pupil to comprehend, with promptness and ease, the substance of a volume or subject; induces concentration of thought; cultivates memory; encourages the habit of investigation; affords practice in the use of language; stores the mind with useful information; forms the habit of noticing important facts and events, and imparts the power of presenting information to others with facility and in an agreeable manner.

“The exercise greatly increases the interest of our ‘general ex-

General Directions.

§ 16. *Mental Discipline*.—The highest ultimate object of intellectual education, is mental discipline, and this discipline can only be acquired by mental labor. Cases are constantly occurring in which pupils require explanation and assistance, and unless they receive this aid they will be greatly retarded in their progress. But examples are also frequently arising in which teachers give assistance that is not required, and thus rob the pupils of the discipline which they would gain by overcoming the difficulties themselves. Teachers should study carefully the capabilities of their pupils, and never do for them what they are able to do without assistance. Pupils should also be guarded against the dangerous habit of assisting one another, without the knowledge and approval of the teacher.

It is one of the most important duties of the teacher, to exercise a watchful care over the pupils' hours and habits of study. Some pupils never learn to study a lesson abstractedly and with the whole mind; and some teachers have heretofore been so unfortunate as not to know that they have any special responsibility in this matter.

The power of attention is essential to the successful prosecution of study at every stage of prog-

Reference.—§ 16. Watts on the Mind.

ercises,' stimulates the minds of the school to more elevated modes of thought and conversation, and induces a higher and more profitable course of reading."—*A. Parish, Principal of High School, Springfield, Mass.*

Tenth Grade.

ress, and the best efforts of teachers should be directed to the cultivation of this great educational power.*

TENTH GRADE.

[PRIMARY DEPARTMENT.]

REGULAR COURSE.

Oral instruction, embracing lessons on common things ; on form, color, flowers, animals, morals and manners. Two or more lessons a day, each from five to eight minutes long.

Repeating verses and maxims, singly and in concert.

Reading from blackboard and from charts, with exercises in spelling, both by letters and by sounds. Two or more lessons a day.

Counting, from one to sixty. Simple exercises in adding, with use of numeral frame, pebbles, beans, etc.

Drawing on the slate, imitating letters, figures, and other objects from blackboard sketches by the teacher, tablets, cards, and other copies. Printing the reading and spelling lessons, and the numerals as far as learned. Two or more exercises a day. [All the pupils should be provided with slates and pencils.]

Physical exercises as often as once every half hour ; each exercise from three to five minutes. See § 105.

The recitations in this grade should never exceed twenty minutes in length. In ordinary lessons, fifteen minutes will be time enough, and in some lessons ten minutes.

* "The surest way to succeed in cultivating and improving the other intellectual powers, is to acquire a command over attention, and to give it a useful direction."—*Marcel*.

"I was told by the Queen's Inspector of the Schools in Scotland, that the first test of a teacher's qualification is, his power to excite and to sustain the attention of his class. If a teacher can not do this, he is pronounced, without further inquiry, incompetent to teach."—*Mann*.

Tenth Grade.

DIRECTIONS.

§ 17. *Oral Instruction.*—The period embraced in the tenth grade should be regarded as a bridge from the freedom of home-life to the more regular discipline of the school-room.* The first lessons should be simple conversational exercises upon home objects, with which the children are already familiar, and in which they feel the greatest interest,—their toys, their plays, their friends, etc.

In all the object lessons given in the 9th and 10th grades, the teacher should bear in mind that the prominent objects to be accomplished are, to cultivate habits of observation, improve the perceptive faculties, and secure habits of accuracy in the use of language. See § 8.

§ 18. In conducting conversational exercises in all the grades, teachers should be careful not to aid the pupils so much as to check their curiosity and deprive them of the opportunity to discover and investigate the properties of objects for themselves.†

References.—§ 17. Calkins's Object Lessons, pp. 11-40; Welch's Object Lessons, first 90 pages.

* "As in the transplanting of the tree from the nursery to the orchard, its continued life and unchecked growth demand that there should be as little change of circumstances, as to climate, soil, and position, as possible, so in the transfer of the child from the nursery to the school-room, he should be led to feel the change as little as possible."—*Report of Board of Education, Oswego, N. Y.*

† "The process of self development should be encouraged to the fullest extent. Children should be led to make their own investi-

 Form ; Color.

§ 19. *Form*.—The first exercises may be devoted to straight lines, comparing short lines with long ones, and selecting the straight lines from the letters of the alphabet and other figures. Illustrate with slate and blackboard exercises. Adopt a similar course with curved lines, and continue the slate exercises. Simple plane figures may also be introduced, as the square, the circle, the triangle.

§ 20. *Color*.—With the help of a box of paints, the teacher can easily prepare a set of cards, each bearing a separate shade of color. Let the children be exercised in selecting particular shades of color. Next let them distinguish the colors in articles of dress, books, furniture of the room, etc. After this, they can exercise their memory in naming a variety of colors and shades of color that belong to objects not present. This will cultivate accuracy and precision in the use of language, and prepare them for

References.—§ 19. Welch's Object Lessons; Calkins's Object Lessons; Barnard's Object Teaching, arts. 9 and 12; Hill's First Lessons in Geometry.

§ 20. Manual of Elementary Instruction, vol. 1; Calkins's Object Lessons; Welch's Object Lessons; Barnard's Object Teaching, arts. 9 and 12; Parker & Watson's Second Reader, lesson 65; Science of Common Things, index; Reason Why, index.

gations, and to draw their own inferences. They should be *told* as little as possible, and induced to *discover* as much as possible. Humanity has progressed solely by self-instruction; and that to achieve the best results each mind must progress somewhat after the same fashion, is continually proved by the marked success of self-made men."—*Herbert Spencer*.

Tenth Grade.

useful exercises in describing objects. Children should also be encouraged to bring to the school various articles representing as many different shades of color as they can find.

§ 21. *Flowers*.—Flowers are among the first objects that attract the special attention of children, and they furnish desirable subjects for some of the earliest object lessons of the school-room. The pupils should be encouraged to bring flowers to school, and exercised in distinguishing their names, colors, forms, etc., but all the lessons in this grade should be strictly rudimental. Flowers afford some of the best illustrations of the different shades of color, and may be studied profitably in connection with the study of color.

§ 22. *Animals*.—Lessons on common domestic animals, as the horse, the cow, the dog, and the cat, are among the most entertaining and suitable exercises for pupils in this division. These lessons should be made very simple, extending only to the most familiar and obvious points, as form, color, size, speed, strength, food, covering, habits, uses, etc. The prominent object of these lessons should be to excite observation and cultivate feelings of humanity. Short anecdotes respecting the different

References.—§ 21. Child's Book of Nature, part 1; Manual of Elementary Instruction, vol. 2.

§ 22. Barnard's Object Teaching, art. 9; Willson's Third Reader; Carll's Child's Book of Natural History; Manual of Elementary Instruction, vol. 1. Also selected articles from the different school Readers.

Verses and Maxims ; Reading, etc.

animals should be presented by the teacher, and, when practicable, drawn from the pupils. Pictorial illustrations and outline sketches should be employed in connection with these exercises as far as practicable;* and the animals themselves should in some cases be brought to the school-room, if it can be done without materially interrupting the exercises.

Morals and Manners.—See § 7.

§ 23. *Verses, Maxims, etc.*—A few simple, easy verses, embodying moral sentiments or useful information, will help to furnish an agreeable variety in the exercises. The children may also be taught to repeat a few brief maxims and sentiments, as, “What is worth doing at all is worth doing well;” “It is better to suffer wrong than to do wrong;” “A place for every thing, and every thing in its place;” “Never leave till to-morrow what should be done to-day.”

§ 24. *Reading and Spelling.*—The first lessons in reading and spelling should be taught from the blackboard. First, present an object to the class, as a hat, and have the pupils pronounce the word *hat*. They already understand that the word which they *hear* represents the object which they *see*. Other illustrations of *seeing* and *hearing*, as applied to the same object, may be introduced by the teacher, or drawn from the class.

References.—§ 23. Sanders's Third Reader, lesson 50; Parker & Watson's Third Reader, lesson 30; Chambers's Information for the People.

* See Manual of Elementary Instruction, vol. 1.

Tenth Grade.

Next, print the name *hat* neatly on the black-board, and teach the class that the word which they *see* represents the same thing as the word which they *hear*; and that both represent the object which they see before them. The word should now be pronounced by the class individually and in concert, with their attention directed to the board, till each member is able to call the word at sight. Similar exercises, with other words, may be continued for several days; but no word should be introduced which the pupils can not be made to understand. Each new word placed upon the board, should be made the subject of familiar conversation, and, if practicable, of illustration, so that it may convey to the mind of the child a clear idea of the object represented.

As the spoken language consists of *sounds*, the teacher should now commence teaching the pupils to analyze these sounds and utter them separately. The words already learned should be employed for this purpose, so that the child may be required to learn only one new thing at a time.

As soon as the pupils have learned to analyze all the words they have gone over, they may next learn the *names of the letters*, using the same words as before.

After the class have learned in this way from five to ten words, so that all the children are able to call each word at sight, and spell it correctly, both by letters and by sounds, the teacher may introduce Primary Cards containing simple monosyllabic words

Reading and Spelling.

and sentences. The teacher should continue to print simple exercises on the blackboard, as before, and use them in connection with the lessons on the cards. See also §§ 1 and 2.

§ 25. The pupils should now be required, at stated hours, to print every lesson neatly on their slates; and they should receive a mark of credit for every satisfactory effort. As often as once a day, they should be called on at recitation to read or spell a lesson from their slates.

§ 26. From this time forward, let it be regarded as essential to the completeness of every lesson that each scholar shall be able to define all the words introduced, and spell them both by letters and by sounds.* Teachers too often accept definitions that are exceedingly vague and defective, not to say erroneous. The construction of a simple sentence embodying a word, is often the most satisfactory definition of it that can be given by the young learner.† Let it also be regarded as a rule of paramount importance, that every lesson learned shall afterward be made the subject of frequent and thorough *reviews*, so that the pupils may not fail to retain what they have once acquired.

* "Each difficult word should be uttered clearly, first by its elements, and then by their combination."—*Wm. H. McGuffey*.

† "More attention should be given to defining than it now receives. The knowledge of the meaning of words possessed by most pupils in our schools, is exceedingly limited. It is by *using* words that we best learn their meaning; hence one of the first exercises in a well-conducted Primary school is forming sentences which shall embrace the words of the reading lesson."—*John G. McMynn*.

Tenth' Grade.

§ 27. An important direction to be observed from the commencement, is to give constant and special attention to *articulation*. There can be no good reading without correctness of articulation, and it is far easier to form good habits at first, than to correct bad ones at a later period.*

§ 28. *Numbers*.—It is highly important that the first exercises in counting and adding should be illustrated by the use of the numeral frame and various convenient objects, such as pebbles, beans, kernels of corn, etc. Let each number or addition named be illustrated by a corresponding number or addition of objects. Let the children count around the class, each giving a number for himself in turn; let them count the number of children in the room; the lights of glass, the seats and desks, etc.

See, also, §§ 4, 6, 10, 12.

References.—§ 28. Calkins's Object Lessons; Barnard's Object Teaching, art. 12; Manual of Elementary Instruction, vol. 2.

* "Every faculty of the mind, as well as of the body, with regard to its mode of action, has a strong tendency to take a *set*, according to the first impressions made upon it, or the character of its first observations. It becomes, as it were, preoccupied by the first impressions, to the exclusion or diminished force of succeeding impressions."—*Reid's Principles of Education*.

NINTH GRADE.

[PRIMARY DEPARTMENT.]

REGULAR COURSE.

Oral Instruction, embracing lessons on parts, form, and color, illustrated by common objects; on plants; on animals, mostly those with which the children are already familiar; morals and manners; miscellaneous topics. Two or more lessons a day, each from five to ten minutes long.

Verses and maxims.

Reading and Spelling.—Blackboard exercises continued. Cards reviewed. Primer completed. Spelling both by letters and by sounds. The exercises in both reading and spelling to be heard twice a day.

Counting from one to a hundred, forward and backward. Reading and writing Arabic numbers to 50. Addition tables from blackboard, to $4 + 10$, forward and backward, in course; also, by taking any of the numbers irregularly; with use of numeral frame. Extemporaneous exercises in adding series of small numbers. See § 5. Roman numerals to L, both in course and out of course.

Exercises, at least twice a day, with slate and pencil, using elementary drawing-cards, plain figures, pictures placed on the blackboard, and other copies; and printing lessons in spelling, numerals, etc.

Physical exercises from two to five minutes at a time, not less than five times a day. See § 99.

DIRECTIONS.

Oral Instruction.—See §§ 8 and 18.

§ 29. *Parts.*—Pupils in this division should have frequent exercises in distinguishing and naming the different *parts* of which objects are composed.

References.—§ 29. Mayo's Object Lessons; Manual of Elementary Instruction.

Ninth Grade.

Thus, the parts of the human frame, as the head, arms, shoulders, elbows, hands, wrists, fingers, nails, forehead, eyes, eyelids, teeth, etc.; the parts of a house, as sides, ends, doors, windows, floors, roof, stairs, etc.; the parts of a table, book, chair, tree, field, road, carriage, coat, knife, etc.*

Form.—See § 19.

Color.—See § 20.

§ 30. *Plants.*—Common and obvious properties and uses. Distinguish the parts, as roots, stem, leaves, buds, flowers, fruit, and seeds. See § 21.

* “*Object.*—To concentrate observation on actions done in the sight of the children; to call upon them to imitate those actions; and to teach them to describe them in accurate language.

“1. The teacher to perform some action,—such as placing the palm of the right hand on that of the left; and, without requiring the children to describe the act, call upon them to imitate it; or placing the right hand on the left shoulder; the left hand on the right shoulder; extending the right arm, and bending the wrist; holding up the extended right arm, while the left is held downward; folding the arms, etc., requiring the children to imitate each action exactly.

“2. The teacher may then *describe* an action, in place of performing it, requiring the children to carry it out: Put the right hand on the right shoulder, the left hand on the left shoulder; put one arm behind, the other across the chest, extend the left arm, and bend the wrist, etc., etc.

“3. The teacher to perform the action, and the children to describe it: for example, the teacher may touch the upper eyelid of the right eye with the forefinger of the left hand; or touch the inner corner of the left eye with the thumb of the left hand; or fold the arms; or hold up both arms extended, etc., the children describing each successive action: if in doing this they express themselves inaccurately, the teacher should correct them.”—*Manual of Elementary Instruction.*

Miscellaneous Topics.

Animals.—See § 22.

Morals and Manners.—See § 7.

§ 31. *Miscellaneous Topics.*—Meaning and use of the terms *hard, soft, dozen, score, right, left*. Time by clock or watch. Name ten articles of table furniture; six articles made of glass; eight different kinds of fruit; four things that please the teacher; four things that displease the teacher, etc. The teacher will vary and expand these exercises at pleasure.

Verses and Maxims.—See § 23.

Oral Instruction.—See §§ 8 and 18.

§ 32. *Reading and Spelling.*—The following method will be found highly useful in securing the attention of Primer classes, and giving to each pupil the benefit of reading the whole lesson, or such portion of it as may be desired: Let one scholar read the first sentence; then let the class follow, reading the same in concert, and pointing to all the words as they read. Let the next scholar read the second sentence, and the class follow in concert as before, and so on.

The practice of mental reading should also be frequently introduced; all the members of the class pointing carefully to the words of a paragraph or lesson, as they are read by the teacher. If these exercises are properly conducted, they will advance

References.—§ 31. Fireside Philosophy; Graded Course of Instruction, by Home and Colonial School Society; Calkins's Object Lessons.

Ninth Grade.

a class much faster than the method of hearing each pupil read a sentence in turn, without the concert practice in oral and mental reading.

The pupils should be able to point out and explain the *title-page*, *table of contents*, *leaves*, *pages*, *margins*, *frontispiece*, and the *headings* or the *titles* of the lessons. They should also be able to spell all these words before leaving the 9th grade.

Let them be taught to hold a book in a proper manner, in the left hand, with the thumb and little finger on the pages in front, and three fingers on the cover behind.

In preparing an exercise in spelling, it is highly important that young pupils should hear the words pronounced by the teacher. A very useful method is, for the teacher first to pronounce all the words of the lesson distinctly, while the pupils listen attentively and point to the words in the books, as they are pronounced. Next, the teacher pronounces one word, which is repeated by the first scholar in the class; then another word, which is repeated by the second scholar, and so on. After this, if time permits, the teacher and class may pronounce in concert, and then the class pronounce in concert without the teacher.

All the spelling lessons should be neatly printed by the pupils on their slates, and the classes should be required to read the words from their slates in connection with the spelling exercises. See, also, §§ 1, 2, 26, and 27.

Numbers.—See § 28.

Drawing, Printing, etc

§ 33. *Drawing, Printing, etc.*—The teachers of the several Primary grades should assign definite lessons in drawing, printing, etc., to be prepared by all the pupils, with the same regularity and care as any other exercise.* The teacher should spend at least ten minutes each day in assisting the pupils and giving such directions as they may need. When the exercises are completed, they should in all cases be examined by the teacher. Lessons of special excellence should receive marks of credit, and failures resulting from carelessness or indifference, should receive marks of error.

See, also, §§ 4, 6, 10, 12, 14, 15.

EIGHTH GRADE.

[PRIMARY DEPARTMENT.]

REGULAR COURSE.

Oral Instruction.—Parts; size; general qualities; color; animals; plants; trades and professions; morals and manners; miscellaneous topics. Two or more oral exercises a day, each from five to twelve minutes long.

Verses and Maxims. See § 23.

First half of First Reader read and reviewed, with punctuation, definitions, and illustrations. Short daily drill in enunciating the

References.—§ 33. Welch's Object Lessons; Calkins's Object Lessons; Barnard's Object Teaching; Philbrick's Primary School Tablets; Manual of Elementary Instruction.

* "The spreading recognition of drawing as an element of education, is one among the many signs of the more rational views on mental culture now beginning to prevail."—*Herbert Spencer.*

Eighth Grade.

vowels and consonants, and their combinations.* Spelling the columns of words, and words selected from the reading lessons, both by letters and by sounds.

Drawing and Printing.—Two or more exercises a day with slate and pencil, or paper and pencil, using blackboard sketches prepared by the teacher when practicable, drawing-cards when they can be obtained, pictures and various figures from books and cards, etc. Printing lessons in spelling and arithmetic. See § 33.

Addition table completed; thoroughly and constantly illustrated and applied. Extemporaneous exercises in adding series of numbers. See § 5. Reading and writing Roman numerals to one hundred, forward and backward in course; also irregularly.

Physical exercises, from two to five minutes at a time, not less than five times a day. See § 105.

DIRECTIONS.

Oral Instruction.—See §§ 8 and 18.

Parts.—See § 29.

§ 34. *Size.*—Let the children receive their first ideas of a foot, a yard, an inch, etc., by the actual measurement of these different lengths in their presence. Place lines of known lengths on the blackboard as standards of comparison. Let the pupils estimate the length of the room, the height of one of their own number, the width of the street, etc., and then test their different estimates by measuring the objects. Now let the pupils draw lines of speci-

References.—§ 34. Calkins's Object Lessons; Welch's Object Lessons; Barnard's Object Teaching; Manual of Elementary Instruction, vol. 1; Mayo's Lessons on Objects.

* See Watson's National Phonetic Tablets, Philbrick's Primary School Tablets, Sanders's Elocutionary Chart, and Page's Normal Chart of Elementary Sounds.

Size ; General Qualities.

fied lengths on their slates or on the blackboard, as a foot, half a yard, two inches, etc.; after which their lines should be subjected to the test of measurement. The same measures may next be applied to width, and illustrate as before.*

§ 35. *General Qualities*.—After completing the special exercises on each of the qualities of *form*, *color*, etc., a large number of lessons should be devoted to the *general qualities* of objects, including those that have already been taken up separately.

§ 35. Barnard's Object Teaching, particularly art. 12, by James Currie, of Edinburgh; Welch's Object Lessons; Calkins's Object Lessons; Mayo's Lessons on Objects; Manual of Elementary Instruction.

* The following is a report of one of the exercises before an Educational Convention recently held at Oswego, N. Y., to examine into a system of Primary Instruction by Object Lessons:

"Ages of children, five to seven.

"The children were requested to hold their forefingers one inch apart while the teacher measured the space between them.

"Then the children were required to draw lines on the blackboard an inch in length, and others to measure them, stating whether too long, too short, or correct.

"Next they were required to tear papers an inch in length; then to tear them two inches in length; then to fold them three inches in length, and so on, the teacher measuring them meanwhile. At least two out of each three tore and folded their papers of the exact length named.

"Then the children were requested to draw lines on the blackboard one foot in length; then to divide them into twelve inches.

"They readily measured inches, and feet, and yards, both with the rule and with the eye, and drew lines representing them, showing that they understood the relations of these to each other as well as the length of each,"

Eighth Grade.

Thus, the following qualities will be discovered in a *quill*. It is *long, light, stiff, useful, natural, inanimate, animal production*. The barrel is *transparent, or semi-transparent, hard, elastic, bright, light-colored or yellowish, cylindrical, hollow*. The shaft is *feathered, white, stiff or limber, opaque, solid, grooved*. Let each of these qualities be illustrated by comparing it with a similar quality in some other object, and let the meaning of each term be clearly fixed in the mind by an actual examination of the object in which it exists. The principal topics introduced and the names of qualities should be written very plainly on the blackboard, to aid in impressing the lesson on the minds of the pupils. Before closing the exercise, let the pupils be called on to explain the meaning of the terms used, in their own words, and to construct short sentences or phrases embracing them.

This is the best class of lessons that can be given to aid the pupils in enlarging their vocabulary of useful words; and the teacher should be careful to select such subjects as will introduce one or more new words at each exercise.*

§ 36. *Color*.—More extended exercises in discrim-

References.—§ 36. See the references of § 20.

* If properly conducted, these lessons will be found the most efficient means of improving the children's powers of observation, discrimination, and description, and of increasing their stock of useful information. They will also do much to prevent the confusion and misunderstanding of terms which we so often witness in ordinary conversation.—See *Marcel on Language*

Animals; Trades, etc.

inating the shades and tints of color. Primary and secondary colors.

§ 37. *Animals*.—These lessons should be gradually extended to include animals less common and familiar, as the squirrel, the fox, the deer, the owl; with a few foreign animals, as the lion, the camel, the ostrich. As far as practicable, the lessons should be illustrated by pictures in books and on the blackboard, to be copied by the pupils.

Let the characteristics of different animals be pointed out; as, the fidelity and sagacity of the dog, the docility of the horse, the intelligence of the elephant, and the cunning of the fox. Let examples be selected from each of the different classes of animals, for object lessons. Attention should frequently be directed to the wisdom and goodness of the Creator, as shown in adapting the form, covering, etc., of the different animals to their peculiar modes of life, and the climate in which they are found.

Plants.—See § 30.

§ 38. *Trades, Professions, etc.*—Object lessons relating to different employments—the farmer, the blacksmith, the shoemaker, the carpenter, the teacher, the lawyer, etc.; including a particular description of the tools used by the mechanic, farmer, etc., and illustrated, when practicable, by presenting the instruments themselves, and by drawings on the slate and blackboard.

References.—§ 37. See the references of § 22.

§ 38. Hazen's Trades and Professions, in Harpers' Family Lib.

Eighth Grade.

Morals and Manners.—See § 7.

§ 39. *Miscellaneous Topics.*—Relative position of objects, as the direction of a pupil from the teacher, or from another pupil, or from the door. Let the children name the city they live in; the county; the State; the country; capital of the State; of the country; mayor of the city; governor of the State; President of the United States, etc. Day of the week; of the month. Short table, embracing the common divisions of time. Estimate by pupils of the length of a minute, of five minutes, fifteen minutes, etc., without the aid of a clock or watch; submitted to the test at the close of the trial. Five duties to parents; five to brothers and sisters; five to companions at school; six different modes of conveyance; six things made of wood; six made of leather; six streets, with their relative location; six different kinds of food, etc. Meaning and use of terms *natural, artificial; animal, vegetable, mineral; metal; simple, compound; native, foreign; indigenous, exotic; century*, etc.

Reading.—See §§ 1, 26, 27, and 32.

§ 40. *Spelling.*—Let the children spell their own names; the name of the city or town; State; days of the week; months of the year. These exercises should be repeated till the pupils are able to perform them well. See, also, § 2.

§ 41. *Analysis of Sounds.*—“Articulation should be taught and practiced by a thorough analysis of

References.—§ 39. Barnard's Object Teaching, art. 9.

Analysis of Sounds.

the elementary sounds of the language, and their separate and powerful execution by the organs of speech; then, sentences and short passages that require unusual command of the articulate powers may be made the subject of diligent practice.”* It will also be found a highly useful exercise to give the elementary sounds occasionally, in a clear and forcible whisper. The analysis of sounds relates chiefly to reading, and should, therefore, be studied and practiced more in connection with the lessons in reading than with those in spelling.†

* Zachos's Analytic Elocution.

† “After all the elements and their combinations have been made so familiar by practice as to be readily recognized, proceed to analyze, and then to spell the words in the following exercises, in this manner: 1. Pronounce deliberately and firmly.

“2. Divide the word into its syllables, speaking each one separately, and as fully as if it were a word by itself.

“3. Articulate, in proper order, every element separately and very fully.

“4. Enunciate every syllable as it is completed, preserving the distinctness of its elements.

“5. Pronounce the word with due proportion of force and time on each syllable, taking care that the elements, as before articulated, be distinctly preserved in the pronunciation.

“The mode of spelling here proposed is the only proper way of assisting a child that is learning to talk. It can not reasonably be expected that a distinct and organically correct articulation can be acquired by the common custom of learning merely to pronounce words. There can be no doubt that nearly all the stammering, blundering, and indistinct articulation which we so continually hear, while few are conscious of it in themselves, have come very naturally, if not of mere necessity, from the folly of those who expect or allow children to execute words without mastering the simplest elements of which they are composed.”—*Hillard's Third Class Reader*.

Seventh Grade.

Drawing.—See § 33.

§ 42. *Numbers.*—Counting to 100 by twos, using the even numbers, 2, 4, 6, etc.; also using the odd numbers, 1, 3, 5, etc.; forward and backward.

See, also, §§ 4, 6, 10, 12, 13, 14, 15, 16.

SEVENTH GRADE.

[PRIMARY DEPARTMENT.]

REGULAR COURSE.

Oral Instruction.—Form ; size ; general qualities ; weight ; color ; animals ; the five senses ; common things ; miscellaneous topics ; morals and manners. Two or more oral exercises a day, each from seven to fifteen minutes long.

Last half of First Reader completed and reviewed, with punctuation, and definitions and illustrations. Short daily drill in enunciating the vowels and consonants, and their combinations.*

Spelling, both by letters and by sounds, from Speller, and from reading lessons.

Drawing and Printing.—Two or more lessons a day ; same as in eighth grade.

Subtraction table completed, and multiplication table to 5×10 or 5×12 , constantly illustrated by use of beans, etc., and applied. Extemporaneous exercises in adding and subtracting series of numbers. See § 5. Reading and writing Arabic and Roman numerals to five hundred, forward and backward in course ; also out of course.

Physical exercises, from two to five minutes at a time, not less than four times a day. See § 105.

References.—§ 42. Barnard's Object Teaching, art. 12 ; Calkins's Object Lessons ; Davies' Grammar of Arithmetic.

* See Philbrick's Primary School Tablets, Page's Normal Chart of Elementary Sounds, Sanders's Elocutionary Chart, and Watson's National Phonetic Tablets.

Form ; Size.

DIRECTIONS.

Oral Instruction.—See §§ 8 and 18.

§ 43. *Form.*—Lessons on the various relations and conditions of *lines*, as horizontal, vertical, perpendicular, oblique, parallel, diverging, converging, curved, waving, spiral, etc. ; on *angles*—right, acute, obtuse ; on the different kinds of *triangles* ; and on *parallelograms*, *quadrangles*, the *square*, *rectangle*, *rhombus*, *oblong*, *rhomboid*, *trapezoid*, *trapezium* ; use of the term *diagonal*.

Copious slate and blackboard exercises, illustrating all the above lines and figures.

§ 44. *Size.*—It is now time to introduce measures of surfaces and solids. Actual measures, as the gill, the quart, the gallon, the peck, should be brought to the school-room and used in illustrating these lessons, till the children become familiar with them. Let the pupils estimate the measure of a cup, bowl, bottle, pail, basket, etc., and then correct their errors by measuring. Similar exercises should be introduced in relation to surfaces. First, place a square inch, foot, yard, etc., on the board, as standards of comparison. Next, illustrate the division of a square yard or foot into square inches, etc. Let the pupils estimate the number of square yards, feet, inches, etc., in various objects, as the floor, the teacher's

References.—§ 43. Calkins's Object Lessons ; Barnard's Object Teaching, arts. 9 and 12 ; Hill's First Lessons in Geometry.

§ 44. Calkins's Object Lessons ; Barnard's Object Teaching, arts. 9 and 12.

Seventh Grade.

desk, a slate, blackboard, window, etc. Test their accuracy by calling on them to measure the objects. Accompany with copious slate and blackboard exercises.

General qualities.—See § 35.

§ 45. *Weight.*—First call the attention of the pupils to the attraction of the earth, as shown in falling bodies, the tendency of water to run down hill, the effort required to lift a heavy body, etc. Give them different articles of the same size, but made of different substances, as cork, wood, iron, lead, a vial of water and a vial of quicksilver, a bag of shot and a bag of beans. Let them handle and compare them. Distinguish bodies heavier than water from those which are lighter, by actual experiment. Now introduce various standard weights. Let the pupils handle a pound of lead, a pound of wood, a pound of cotton; a body weighing 5 lbs., 10 lbs., 20 lbs., etc. Next let them handle a variety of bodies, and estimate the weight of each; after which their judgment should be tested by the scales.* In this way they will cultivate accuracy of judgment in respect to the weight of different objects presented, an attainment which very few persons ever make.†

Color.—See § 36.

References.—§ 45. Science of Common Things, index; Barnard's Object Teaching, art. 9; Welch's Object Lessons.

* A pair of scales, or some other instrument for weighing, can easily be obtained for this purpose, through some of the pupils.

† See Young's School Teacher's Manual.

Five Senses ; Common Things.

Animals.—See § 37.

§ 46. *The Five Senses.*—General description of the eye, the ear, and other organs of sense. Exercises illustrating the cultivation and use of these organs. Let the children name ten things discovered by the eye; five discovered by the ear; five by touch, etc. Name different qualities, etc., and let the children tell the sense by which they are discovered.

§ 47. *Common Things.*—Object lessons on a clock, watch, nail, carriage, pin, needle, rope, pitch, tar, etc.

§ 48. *Miscellaneous Topics.*—Name six public buildings in the city or town; six different kinds of carriages; ten different foreign fruits; six birds of prey; six different kinds of stores.

The names of the young of different animals. The flesh of different animals used for food,—what called? The voice or natural call of different animals. The largest fish, quadruped, bird, insect, reptile. A collection of men, birds, cattle, fishes, insects,—what called?

Meaning and use of the terms *density, attraction of gravitation, quadruped, biped, insect, reptile.*

§ 49. *Sentence-making, etc.*—At the close of every object lesson, let each pupil make up one or more

References.—§ 46. Child's Book of Nature, part 2; Calkins's Object Lessons; Mayo's Lessons on Objects; Mayhew's Popular Education, chap. 6.

§ 47. Fireside Philosophy, index; Mayo's Lessons on Objects, *passim*; Brande's Cyclopædia, words *Horology, Pin.*

§ 48. Hooker's Natural History, chap. 13.

§ 49. Barnard's Object Teaching, art. 12.

sentences embodying certain points of the lesson, or containing new words that have been learned. The pupils may ordinarily be called on to repeat these sentences in course, extemporaneously; but they should occasionally be required to print or write them with care on their slate, for the inspection of the teacher. Exercises specially meritorious should receive marks of credit; and defective exercises should receive marks of error.

Reading.—See §§ 1, 26, 27, and 41.

§ 50.—*Analysis of Sounds.*—Besides the ordinary exercises in analyzing, by *uttering* the different sounds, pupils should frequently be called on to analyze by *describing* the sounds. Other explanations respecting the forms of words, uses of letters, etc., may be given at the same time.

EXAMPLES.—*Fate*: sound of *f*, atonic; first sound of *a*; sound of *t*, atonic; *e* silent. *Garnish*: hard sound of *g*, subtonic; second sound of *a*; sound of *r*, subtonic; sound of *n*, subtonic; second sound of *i*; sound of *sh*, atonic.—How many sounds has *g*? What are they? Give a word containing the soft sound of *g*; one containing the first sound of *a*. How many syllables in *garnish*? Which syllable is accented? What is accent? Which of the letters in *garnish* are vowels? Which consonants? What letter or letters represent the last sound in *garnish*? Can you name any other elementary sound that is represented by two letters united?

Reference.—§ 50. Wright's Analytical Orthography.

 Spelling ; Numbers.

The description and utterance of the sounds should generally be united in the same exercise; first analyze by uttering the sounds; then by describing them.*

§ 51. *Spelling*.—Spell and review the new terms introduced under “Miscellaneous Topics.” Spell the names of all the objects that can be *seen* in the school-room. Let the scholars bring objects to the school to furnish names for spelling. Spell twenty or more names of visible objects not in the school-room; twenty or more names of invisible objects; twenty or more words denoting motion. The more difficult of these words should be written on the blackboard, and reviewed several times. See, also, § 2.

Drawing.—See § 33.

* The following is a very complete form of analysis, copied from Watson's National Phonetic Tablets :

“ANALYSIS.—1st. The word SALVE, *in pronunciation*, is formed by the union of three oral elements: s ã v—salve. (Here let the pupil utter the three oral elements separately, and then pronounce the word.) The *first* is a modified breathing; hence, it is an atonic. The *second* is a pure tone; hence, it is a tonic. The *third* is a modified tone; hence, it is a subtonic. 2d. The word SALVE, *in writing*, is represented by five letters; s a l v e—salve. *S* represents an atonic; hence, it is a consonant. Its oral element is chiefly formed by the teeth; hence, it is a dental. Its oral element is produced by the same organs and in a similar manner as that of *z*; hence, it is a cognate of *z*. *A* represents a tonic; hence, it is a vowel. *L* is silent. *V* represents a subtonic; hence, it is a consonant. Its oral element is chiefly formed by the lower lip and the upper teeth; hence, it is a labia-dental. Its oral element is formed by the same organs and in a similar manner as that of *f*; hence, it is a cognate of *f*. *E* is silent.

See, also, Holbrook's Normal Methods of Teaching.

Sixth Grade.

§ 52. *Numbers*.—Counting to 100 by two's and by three's, forward and backward: 2, 4, 6, etc., 1, 3, 5, etc., 3, 6, 9, etc., 2, 5, 8, etc., 1, 4, 7, etc.* Adding single columns of figures on the slate and blackboard.

See, also, §§ 4, 6, 9, 10, 12, 13, 14, 15, 16.

SIXTH GRADE.

[PRIMARY DEPARTMENT.]

REGULAR COURSE.

Oral Instruction.—Form; animals; trees and plants; foreign productions; miscellaneous topics; common things; manners and morals. Two or more oral exercises a day, each from eight to fifteen minutes long.

Reading and Spelling.—First half of Second Reader completed and reviewed, with punctuation, definitions, and illustrations. Frequent exercises in enunciating the elementary sounds separately and in their principal combinations.† Spelling, both by letters and by sounds, with definitions, from speller, and from reading lessons.

Drawing, writing, etc., with slate and pencil or paper and pencil, using drawing cards when obtainable, cuts from books, and other copies; writing the large and small letters of the alphabet in plain script hand.

References.—§ 52. Barnard's Object Teaching, art. 12; Manual of Elementary Instruction; Davies' Grammar of Arithmetic.

* See a valuable article on Oral Lessons in Arithmetic, by Daniel Hough, of Cincinnati, in Ohio Educational Monthly for February, 1862. Also *Course of Studies for a True Graded School*, in Report of Hon. J. M. Gregory, for 1861.

† See Sanders's Elocutionary Chart; Watson's National Phonetic Tablets; and Philbrick's Primary School Tablets.

 Form ; Animals.

Elementary arithmetic. Multiplication and division tables completed, with constant illustrations and applications. Extemporaneous exercises in combining series of numbers. See § 5. Reading and writing Arabic and Roman numerals to 1,000.

Abbreviations.

Physical exercises, from two to five minutes at a time, not less than four times a day. See § 105.

DIRECTIONS.

Oral Instruction.—See §§ 8, 18, and 49.

§ 53. *Form.*—Copious explanations and illustrations on the *circle*, and on the terms connected with it, as *diameter*, *radius*, *chord*, *segment*, *sector*, *tangent*, *semicircle*, *quadrant*. Also, terms *oval*, *ellipse*, *parabola*; *pentagon*, *hexagon*, *heptagon*, *octagon*, *nonagon*, *decagon*, *polygon*; line of beauty. Measurement of angles.

§ 54. *Animals.*—Twenty or more lessons on the following topics, with pretty full descriptions and copious illustrations by engravings, and cuts, and slate and blackboard sketches. Division into classes—beasts, birds, fishes, insects, reptiles; quadrupeds, bipeds; domestic, wild; useful; amphibious; poisonous; beasts and birds of prey, etc., with illustrative examples of each class. Instinct of animals, care of their young. Tools of animals, their cover-

References.—§ 53. See references of § 43.

§ 54. Child's Book of Nature, part 2; Reason Why, index; Barnard's Object Teaching, art. 17; F. A. Allen's Primary Geography; Hooker's Natural History; Willson's 4th and 5th Readers; Carll's Child's Book of Nature; Webster's and Worcester's Quarto Dictionaries; Hailman's Object Teaching; Chambers's Elements of Zoölogy.

Sixth Grade.

ing, food, habitations, motions. Plumage of birds, nest-building, migratory habits, etc. Contrasts and resemblances of different classes of animals.

§ 55. *Trees and Plants*.—Similar lessons to those given in the 8th and 9th grades, but more extended. Compare the leaves of different plants and trees; the flowers; the seeds; the fruit. Compare flowers with leaves; branches with roots. Specimens should be brought to the school, and the children should have exercises, in naming and distinguishing them.

§ 56. *Foreign Productions*.—Object lessons on foreign productions in general use, including ginger, pepper, cloves, cinnamon, nutmegs, oranges, lemons, olives, dates, almonds, tamarinds, prunes, pineapples, tea, coffee, cocoa, chocolate, figs, bananas, raisins, sago, india-rubber, ivory, pearls, camphor, sponge, whalebone, gum arabic.

§ 57. *Miscellaneous Topics*.—Description and value of the different coins in common use, with exercises in distinguishing them. The names of thirty differ-

References.—§ 55. Child's Book of Nature, part 1; Fireside Philosophy, index; Willson's 4th and 5th Readers; Carll's Child's Book of Natural History; Manual of Elementary Instruction, vol. 2; Hailman's Object Teaching; Reason Why, index; Brande's Cyclopædia; Allen's Primary Geography; Webster's and Worcester's Quarto Dictionaries.

§ 56. Fireside Philosophy, index; Reason Why, index; Calkins's Object Lessons; Mayo's Lessons on Objects; Barnard's Object Teaching, arts. 9 and 12.

§ 57. Barnard's Object Teaching, arts. 9 and 12; Willson's Third Reader; Brande's Cyclopædia, words *Coinage*, *Numismatics*, *Money*.

Common Things ; Reading.

ent kinds of vessels to contain liquids and solids, and the use of each. Object lessons on spring, summer, autumn, winter.

§ 58. *Common Things*.—Object lessons on common articles, including leather, sugar, honey, glass, porcelain, starch, hemp, flax, cotton, wool, ink.

Manners and Morals.—See § 7.

§ 59. *Reading*.—Pupils should now be required to devote a portion of each day to the preparation of their reading lessons. They will need the special assistance of the teacher in learning how to set themselves at work, and the reading exercises should be conducted in such a manner, as to test the fidelity of the pupils in making the necessary preparation.* See, also, §§ 1, 26, and 27.

Spelling.—See § 2.

References.—§ 58. Fireside Philosophy, index ; Reason Why, index ; Mayo's Lessons on Objects ; Norton & Porter's First Book of Science, part 2.

§ 59. Davies' Logic of Mathematics.

* "It is in connection with the reading lessons that the peculiar work of the intermediate grade—the work of *learning how to get lessons*—begins. The first step will be to secure the careful attention of the pupils to the meaning of their lessons, by questioning them on the sense. This should be kept up from day to day, till the pupils acquire the habit of reading attentively, and become able to close their books immediately and give the substance, first of a single sentence, then of a paragraph, and finally of a page or an entire lesson. The inflections and emphasis should be carefully studied, to bring out the true sense of the lesson."—*Course of Studies for a True Graded School, in Report of J. M. Gregory, Superintendent of Public Instruction, Michigan.*

Sixth Grade.

Drawing.—See § 33.

§ 60. *Numbers.*—Counting by three's, four's, and five's, forward and backward.

Special pains should be taken to explain and illustrate the operation of multiplying one number by another, and of dividing one number by another; the relation of multiplication to addition, division to subtraction, multiplication to division, etc. Let the pupils also repeat these explanations and illustrations till the relations are thoroughly understood.*

§ 60½. *Writing.*—Pupils must be provided with long pencils, and hold them as they would hold a pen.

See, also, §§ 4, 6, 9, 10, 12, 13, 14, 15, 16.

References.—§ 60. Barnard's Object Teaching, art. 12; Manual of Elementary Instruction, vol. 2.

* "Age of children eight to nine years.

"The design of the lesson was to show the relations between addition, multiplication, and division.

"The teacher wrote on the blackboard, and the children repeated the following :

$3+3=6$, $6+3=9$, $9+3=12$, $12+3=15$, etc., up to 99.

"Then the teacher wrote $99-3=96$, $96-3=93$, and so on down to $6-3=3$.

Then $6+6=12$,

$12\div6=2$,

$6+6+6=18$,

$18\div6=3$,

$6+6+6+6=24$,

$24\div6=4$, and so on.

"The children read $6+6=12$, two times 6 are 12, etc.

$7+7=14$,

$14\div7=2$,

$7+7+7=21$,

$21\div7=3$,

$7+7+7+7=28$,

$28\div7=4$, and so on to 100.

"Children read $7+7=14$, two times 7 are 14. 14 divided by 7=2. $7+7+7=21$, three times 7 are 21. 21 divided by 7=3."—

Report of Examination ; Oswego Primary Schools.

FIFTH GRADE.

[PRIMARY DEPARTMENT.]

REGULAR COURSE.

Oral Instruction.—Form ; color ; common things ; trees, plants, etc. ; animals ; shells ; geography ; miscellaneous topics ; morals and manners. Two or more oral exercises a day, each from ten to twenty minutes long.

Reading and Spelling.—Last half of Second Reader completed and reviewed, with punctuation, definitions, and illustrations. Frequent exercises in enunciating the elementary sounds and their combinations, using charts and tablets of sounds, etc. Spelling both by letters and by sounds, with definitions from speller and from reading lessons.

Primary Geography from text-book, gradually introduced in connection with Oral Geography.

Sentence-making, written abstracts, etc. See §§ 6, 9, and 49.

Drawing, writing, etc., with slate or lead pencil ; writing with ink in script hand.

Mental Arithmetic.—Multiplication table to 12×12 , and Division table to $144 \div 12$, thoroughly reviewed, in course and out of course. Extemporaneous exercises in combining series of numbers. See § 5. Reading and writing Arabic and Roman numerals to 10,000. Slate and blackboard exercises in adding numbers—examples of three or four columns each.

Abbreviations reviewed.

Declamations and recitations.

Physical exercises, from two to five minutes at a time, not less than four times a day. See § 105.

DIRECTIONS.

Oral Instruction.—See §§ 8, 18, and 49.*

§ 61. *Form.*—Brief lessons on the five regular

* “The pupils, it should be remembered, are to observe and tell what they have observed, rather than to learn what the teacher

Fifth Grade.

solids—cube, tetrahedron, octahedron, dodecahedron, icosahedron; and on the pyramid, prism, parallelopiped, cylinder, cone, sphere, hemisphere, spheroid, etc. Terms, *spherical, cylindrical, conical, spheroidal*.

§ 62. *Color*.—A few lessons in mixing colors. How to produce secondary colors. Harmony of colors.*

References.—§ 61. Davies' Elementary Geometry and Trigonometry, which contains full directions for making the five regular solids from pasteboard; Welch's Object Lessons; Calkins's Object Lessons; Barnard's Object Teaching, art. 9; Brande's Cyclopædia.

knows. Knowledge lying much beyond their power of observation and discovery is of but little use to them yet."—*J. M. Gregory*.

* The following is a report of one of the exercises before an Educational Convention held at Oswego, N. Y., to examine into a system of Primary instruction by Object Lessons:

"Children from nine to ten years of age.

"The children were led to distinguish primary, secondary, and tertiary colors from mixing colors. The teacher held up vials containing liquids of red, yellow, and blue. She then mixed some of each of the *red* and *yellow* liquids, and the children said the color produced by the mixture is *orange*. She then mixed *yellow* and *blue*, and the children said *green* had been produced. Then she mixed *blue* and *red*, and *purple* was the result.

"The teacher printed the result of each mixture on the black-board thus :

<i>First Colors or Primaries.</i>			<i>Second Colors or Secondaries.</i>
Red	+	Yellow	= Orange.
Blue	+	Yellow	= Green.
Blue	+	Red	= Purple.

"Next she proceeded to show how the idea and term *tertiary* is derived from the secondaries by mixing the secondaries, and printing the result on the board, as before :

Common Things ; Trees and Plants.

§ 63. *Common Things*.—Object lessons on common objects, including vinegar, alcohol, wine, yeast, bread, paper, glue, soap, putty, silk, linen, spermaceti, wax, indigo, butter, cheese.

§ 64. *Trees, Plants, etc.*—Ten or more oral exercises. Qualities, structure, and office of roots, leaves, buds, stem, flowers, seeds, etc. Growth of the differ-

References.—§ 63. Fireside Philosophy, index; Mayo's Lessons on Objects; Barnard's Object Teaching, arts. 5 and 9; Norton & Porter's First Book of Science, part 2; Brande's Cyclopædia.

§ 64. Willson's Fifth Reader; Child's Book of Nature, part 1; Fireside Philosophy, index; Reason Why, index: Worcester's and Webster's Quarto Dictionaries.

<i>Secondaries.</i>		<i>Third Colors, or Tertiaries.</i>
Green + Orange	=	Citrine.
Orange + Purple	=	Russet.
Purple + Green	=	Olive.

"After the children had read over in concert what had been printed on the board, it was erased, and the pupils were required to state from memory what colors are produced by mixing primaries, with the name of each secondary; also, what by mixing the secondaries, and the name of each tertiary.

An exercise on *Harmony of Colors* was then given to the same class of children. They were requested to select two colors that would look well together, and place them side by side; then two were placed together that do not harmonize. During these exercises, the teacher printed on the board—

Primary *yellow* harmonizes with *secondary purple*.

" *red* " " *green*.

" *blue* " " *orange*.

"This was read by the pupils, then erased, and the individuals were called upon to state what color will harmonize with these several colors, as their names were respectively given."

Fifth Grade.

ent parts. The teacher should bring as many specimens as practicable to the class, and encourage the children to bring them also. Let the pupils examine several different kinds of wood, and exercise their skill in naming them. Some attention to the classification of trees, plants, etc., in families—the oak family, the pod-bearing family, the rose family, the grasses, etc., with specimens and illustrations when practicable. The innumerable uses to which vegetable substances are applied, in food, medicine, clothing, building, etc., furnish an ample field for extending these exercises as far as time permits.

Name five different evergreen trees; ten fruit trees; five ornamental trees; five used for fuel, etc. Lessons on cork, mahogany, logwood, rosewood.*

§ 65. *Animals*.—Transformations of certain insects. *Animalculæ*.

§ 66. *Shells*.—Five or more lessons on shells, illustrating some of the principal classes.

§ 67. *Geography*.—This branch should be introduced by familiar lessons on the geography of the city or town; its rivers or small streams, direction in which they flow, their width and depth; bridges;

References.—§ 65. See references of § 54.

§ 66. Hooker's *Natural History*; Brande's *Cyclopædia*, word *Conchology*; Mayo's *Lessons on Shells*; Worcester's and Webster's *Quarto Dictionaries*.

§ 67. *Primary Geography on the basis of the Object Method of Instruction*, by F. A. Allen; Barnard's *Object Teaching*, art. 12; Calkins's *Object Lessons*.

* See Hailman's *System of Object Teaching*.

Miscellaneous Topics ; Metals.

location and direction of the principal streets, their width and length ; public buildings, their location and use ; public and private schools ; manufactories ; boundaries ; date of settlement ; early history ; present population ; population twenty years ago ; town or city officers, etc.

Let these exercises be illustrated by the use of an outline map of the city or town, drawn on the black-board.

Next, extend the exercise so as to embrace the county, and illustrate by map on the board as before. Then extend to the State ; boundaries of the State ; rivers ; cities ; capital ; railroads ; canals ; length and width of the State ; surface ; soil ; climate ; productions ; Governor ; Legislature ; population, etc.

§ 68. *Miscellaneous Topics*.—Origin and meaning of the names of the months. Traveling by land ; by water.

§ 69. *Metals*.—Which are the precious metals ? Which the most useful of the metals ? Which are the heaviest ? Which is a fluid ?

Object lessons on iron, zinc, tin, copper, lead, mercury, silver, gold ; on steel, wire, brass, pewter, etc.

Terms *ductile*, *malleable*.

References.—§ 68. Fireside Philosophy, word *Month*, in index ; Sargent's Third Reader, lesson 139.

§ 69. Carll's Child's Book of Natural History ; Fireside Philosophy, index ; Mayo's Lessons on Objects ; Calkins's Object Lessons ; Norton & Porter's First Book of Science, part 2 ; Brande's Cyclopædia.

Fifth Grade.

Morals and Manners.—See § 7.

Reading.—See §§ 1, 26, 27, 41, 50.

§ 70. *Spelling.*—Spell the names of the different books of the Bible; of the different studies pursued in school; of a hundred different articles, selected from the “Prices Current” of the newspapers; of the principal streets of the city or town; of the numerals, both ordinal and cardinal, from one to twenty. Dictation exercises.

The spelling exercises of this grade should be mostly oral; but the classes may occasionally be called on to spell by printing the words with a pen or pencil, on their slates or on paper. See, also, § 2.

§ 71. *Arithmetic.*—Pupils should receive special assistance from the teacher, in *learning how to prepare their lessons* in mental arithmetic. Counting by sixes, sevens, eights, nines, and tens, forward and backward: 1, 7, 13, etc., 2, 8, 14, etc., 3, 9, 15, etc.; 1, 8, 15, etc., 2, 9, 16, etc., 3, 10, 17, etc.; 1, 9, 17, etc., 2, 10, 18, etc., 3, 11, 19, etc.; 1, 10, 19, etc., 2, 11, 20, etc., 3, 12, 21, etc.; 1, 11, 21, etc., 2, 12, 22, etc., 3, 13, 23, etc.

Slate arithmetic should be gradually introduced, on the blackboard and on slates, preparatory to the use of a text-book in the next grade. Elementary exercises in notation, numeration, and addition.

Adding columns of numbers; short columns grad-

References.—§ 70. Northend's Dictation Exercises; Parker & Watson's Speller; Worcester's Speller; Sanders's Speller, etc.

§ 71. Barnard's Object Teaching, art. 12; Manual of Elementary Instruction, vol. 2.

Arithmetic ; Drawing.

ually extended to long ones ; slowly at first, but more and more rapidly as the pupils acquire facility in the operations. Dictate columns of twenty or more figures ; then let all the pupils commence at the same moment and note the time required by each to complete the addition. All the pupils should learn to add by giving the sum at each step, without naming the number to be added : thus, in adding the numbers 5, 8, 6, 9, etc., say 5, 13, 19, 28, etc., and not 5 and 8 are 13, and 6 are 19, and 9 are 28, etc.

§ 71½. *Drawing*.—The study and application of the principles of drawing should be gradually extended till the pupils are able to produce representations of objects with facility and accuracy. Let the classes use cuts from books, drawing-cards, when obtainable, and other copies. They should also have frequent exercises in sketching directly from the objects represented.* See, also, § 33.

Writing.—See § 3.

See, also, §§ 4, 6, 9, 10, 12, 13, 14, 15, 16, 49.

* “This beautiful art should certainly be placed among the *necessaries* of education, to be begun early, and imparted to all. There is no one who has not, on some occasion, found that it would have been extremely serviceable to him to have been able to *draw* his ideas, as well as to speak or to write them ; a slight sketch will often show in a moment, and with great precision, what many words would fail to make clear ; and a very little time in early youth devoted to lessons in drawing, including mechanical as well as other branches of drawing, would impart to every one a power which, in after life, could not fail to be useful in a variety of ways ; that is, real practical lessons in drawing, carried out on the principles of the art—not mere copying, nor getting the master to patch up for

Fourth Grade.

FOURTH GRADE.

[GRAMMAR DEPARTMENT.]

REGULAR COURSE.

Oral Instruction.—Sound ; light ; water ; meteorology ; miscellaneous topics ; geography ; morals and manners. The time devoted to oral instruction each week to be equal in amount to fifteen minutes a day.

Geography from text-book.

Construction of sentences, etc.

First half of Third Reader (or corresponding number of the series), with punctuation, definitions, and illustrations, and spelling by sounds.

Written and oral spelling, with definitions from speller and from reading lessons.

Drawing.

Writing.

Mental arithmetic continued. Slate arithmetic to long division, and reviewed. Extemporaneous exercises in combining series of numbers. See § 5.

Declamations and recitations.

Physical exercises, from two to four minutes at a time, not less than three times a day. See § 105.

DIRECTIONS.

Oral Instruction.—See §§ 8 and 18.*

§ 72. *Sound.*—How produced. Illustrate by stretched cord, or some other vibrating body. Ac-

the pupil something presentable at home, but real training to the power of making good representations of a variety of objects on a flat surface."—*Reid's Principles of Education*.

* "*Lessons on objects* are most valuable ; especially lessons on the various familiar objects around us, when the learner is required to notice, or himself to suggest, every thing that can be remarked

Sound ; Light.

tion on the ear. High and low sounds—how produced. Relation of the air to sound. Velocity of sound. The human voice. Varieties of the human voice. Name twenty different kinds of sounds. Echoes; whispering gallery; ear-trumpet. Musical instruments; bells.

§ 73. *Light*.—Luminous bodies. Velocity of light. Difference between the light of the sun and that of the moon. Laws of reflection; mirrors. Refraction; experiment with piece of money in a bowl of water. Action of the microscope and telescope. Solar spectrum; rainbow. Structure and action of the eye. Danger of injuring the eyes from excessive use; from imprudent exposure to light; from

References.—§ 72. Science of Common Things, index; Reason Why, index; Calkins's Object Lessons; Barnard's Object Teaching, arts. 4 and 9; Norton & Porter's First Book of Science, part 1; Brande's Cyclopædia.

§ 73. Child's Book of Nature, parts 2 and 3; Fireside Philosophy; Science of Common Things, index; Reason Why, index; Barnard's Object Teaching, art. 4; Calkins's Object Lessons; Norton & Porter's First Book of Science, part 1; Beecher's Physiology and Calisthenics; Brande's Cyclopædia.

about them. Such lessons should be begun early, but not stopped soon, as is too often the case. It is a mistake to suppose that they are useful only to young children; they should be continued, of course with more detail and with greater exactness, and with a greater variety of objects, up to a late period. Nor should they be confined to the pupil suggesting the qualities with the object before him; he should be made to describe it again minutely, from recollection, and then write down an account of its qualities."—*Reid's Principles of Education*.

Fourth Grade.

reading in twilight; from reading fine print. Danger of allowing young children to look steadily at a light. Average distance at which a book should be held from the eye; effect of holding a book too near the eye. How cats and other animals see in the night. Cause of color. Twilight.

Terms, *iridescent*, *spectrum*, *solar*.

§ 74. *Water*.—Four or more lessons on the common properties and uses of water. Hard and soft water; water of the ocean, etc.

§ 75. *Meteorology*.—Six or more oral lessons on winds, clouds, fogs, dew, frost, moisture settling on a vessel of cold water in a warm room, rain, snow, hail, ice.

§ 76. *Miscellaneous Topics*. Oral lessons on printing, parchment, Julian calendar, copyright, patents, jail of the county, prison or prisons of the State.

§ 77. *Geography*.—After the introductory exercises of the previous grade, introduce a map of the United States, showing the situation and relative size of the State in which the pupils reside; the principal rivers of the country, mountains, capital, largest cities, etc. Divisions of the United States;

References.—§ 74. Science of Common Things, index; Reason Why, index; Brande's Cyclopædia; Calkins's Object Lessons.

§ 75. Barnard's Object Teaching, art. 2; Child's Book of Nature, part 3; Norton & Porter's First Book of Science, part 2; Science of Common Things, index; Fireside Philosophy, word *Winds*; Reason Why, index; Hailman's Object Teaching; Brande's Cyclopædia.

§ 76. Brande's Cyclopædia.

Geography.

compare the climate of the Northern and Southern States; principal productions of each division; commerce; compare productions with those of other countries; President, etc.

The use of the globe should be introduced in this connection, showing the rotundity of the earth, rotation on its axis, day and night, poles, equator, parallels of latitude, meridians of longitude, tropics, polar circles, zones, points of the compass at any given place, the continents, oceans, and relative position of places, situation of the United States, and of the State and city or town in which the pupils live; relative size of each.

Similar illustration should be constantly given with the globe in connection with the recitations from the text-book, and no definition should be passed by till the teacher has satisfactory evidence that the pupils understand clearly the object described.

Lessons in geography should be accompanied by brief historical sketches of important events connected with the different countries, and by some allusions to ancient geography, and the changes through which the countries have passed in their governments, boundaries, etc.

One of the most common faults in teaching geography is the practice of requiring pupils to learn the names of a large number of unimportant places, the exact population of unimportant cities, etc.* It is

* "Great improvements have been made, especially of late, in teaching geography. Higher views of the whole subject have been

Fourth Grade.

not desirable that pupils should be required to "give the names of thirteen towns on the Tocantins river," nor even the number of square miles in every State of the Union. They may be able to learn these things so as to recite them, but they will not be likely to remember them; nor is the knowledge thus gained an equivalent for the labor required, even if it could be retained.

Construction of Sentences.—See §§ 6, 9, and 49.

Reading.—See §§ 1, 41, and 50.

§ 78. *Analysis of Sounds.*—The pupils of the Grammar divisions should have frequent exercises in spelling by sounds any words that may be selected from their reading lessons; and pupils that are not able to analyze the sounds of words promiscuously chosen, should receive special attention until this standard is attained.

§ 79. *Spelling.*—Spell one hundred words selected from the advertising columns of the newspapers. Five or more dictation exercises, in writing entire advertisements selected from newspapers. Fifty or more words selected from the lessons in geography.

The spelling exercises of this grade may be about

References.—§ 79. Northend's Dictation Exercises.

taken, great general principles have been substituted for innumerable useless details; the value of map drawing, already acknowledged, has been still more effectively insisted upon; the intimate connection between geography and history has been pointed out, and, in other ways, a new and stronger interest has been excited." —George B. Emerson. See, also, Fifteenth Annual Report of Secretary of Massachusetts Board of Education, by Dr. Sears, p. 65.

Spelling ; Drawing.

half oral and half written. But spelling exercises should be conducted chiefly in writing, as soon as pupils are sufficiently expert with a pen to write legibly, in the usual time for a recitation, ten or fifteen of the more difficult words in the lesson.* As the pupils become more ready in the use of the pen, the number of words may be increased. Oral exercises in spelling should not be entirely dispensed with in any of the grades.

Written exercises in spelling should in all cases be regarded as lessons in penmanship as well as in orthography, and examples of carelessness in writing should be charged as errors.

In the 1st, 2d, and 3d grades, written exercises in spelling should be put in suitable blank books, and preserved for the inspection of the School Directors, and others. Every word misspelled should afterward be rewritten correctly by the pupil, in his manuscript speller. See, also, § 2.

§ 80. *Drawing*.—Special attention should be given in this grade to the principles of drawing, preparatory to map drawing. Pupils should also have lessons in drawing various mathematical lines and

* "Spelling by writing, when the pupil can write, appears to have great advantage over spelling orally. In the business of life, we have no occasion to spell orally, and thousands of cases have made it certain, that the same person may be a good speller with the lips, who is an indifferent one with the pen."—*Mann*.

"The orthography of a language should be taught by *writing*; an opinion, we believe, that is now pretty well established, but not sufficiently put into practice."—*London Quarterly Journal of Education*.

Fourth Grade.

figures, architectural figures, etc., and in copying pictures from books and other sources.* See, also, §§ 33 and 71½.

Writing.—See § 3.

§ 81. *Arithmetic.*—Teachers should be careful to secure a thorough acquaintance with the principles of notation and numeration. As soon as pupils are able to add figures together, the teacher should dictate several numbers to them orally, requiring them to place units under units, tens under tens, etc., and add them together. Examples of this class should be made more and more difficult, as the pupils are able to write them, embracing from five to ten numbers each, some of them extending to trillions or quadrillions, and containing more ciphers than significant figures, so that the pupils will frequently be left to fill whole periods and parts of periods with ciphers. These exercises will furnish a valuable review of addition, and a still more valuable review of notation and numeration.

Rapid exercises in adding long columns of numbers. See § 71.

References.—§ 81. Northend's Teachers' Assistant, letter 17; Holbrook's Normal Methods; Davies' Logic of Mathematics.

* "Linear Drawing, which supplies the deficiencies of descriptive language, is another acquirement indispensable to the instructor. It may be made a most useful instrument of teaching, even in the humblest school. In the exact, the natural, and the experimental sciences, especially, he who has a command of this art is never at a loss how to render the most intricate details clear, intelligible, and interesting to his auditory."—*Marcel on Language.*

Arithmetic.

Recitations in arithmetic require constant watchfulness on the part of the teacher, to secure fullness and accuracy of expression. The following are illustrations of common faults:

1. "If one cord of wood cost \$5, six cords will cost 5 times 6," instead of "6 times \$5."

2. "If one cord of wood cost \$5, six will cost 6 times 5," instead of "six cords will cost 6 times \$5."
[Two errors.]

3. "In $\frac{36}{9}$ of a dollar, there are as many dollars as 9 is contained in 36," instead of "as many dollars as the number of times 9 is contained in 36," or "as many dollars as 9 is contained times in 36."

4. "To subtract one fraction from another, reduce the fractions to a common denominator and subtract the numerators," or "subtract one numerator from the other," instead of "subtract the numerator of the subtrahend from the numerator of the minuend."

See, also, §§ 4, 6, 7, 9, 10, 12, 13, 14, 15, 16.

THIRD GRADE.

[GRAMMAR DEPARTMENT.]

REGULAR COURSE.

Oral Instruction.—Historical sketches; air and water; electricity and magnetism; minerals; morals and manners; familiar exercises in grammar, embracing the parts of speech and construction of sentences. The time devoted to oral instruction each week, to be equal in amount to fifteen minutes a day.

Geography, through United States, with map drawing.

Third Grade.

Grammar to the verb, with lessons in the use of language—to follow oral exercises in grammar.

Third Reader (or corresponding number of the series) completed, and first third of Fourth Reader, with punctuation, definitions and illustrations, and elementary sounds.

Written and oral spelling, with definitions, from speller and from reading lessons.

Writing.

Mental arithmetic continued, with thorough reviews. Slate arithmetic to addition of denominate numbers, and reviewed. Rapid exercises in adding columns of figures. Extemporaneous exercises in combining series of numbers. See § 5.

Declamations and recitations.

Physical exercises from two to four minutes at a time, not less than three times a day. See § 105.

DIRECTIONS.

Oral Instruction.—See §§ 8 and 18.

§ 82. *History.*—Brief sketches of prominent characters and events in history, both ancient and modern: Babylon, its walls and hanging gardens; Pyramids of Egypt, Trojan War, Homer, Founding of Rome, Alexander, Demosthenes, Virgil, Julius Cæsar, Mohammed, the Crusaders, Columbus, Washington, Franklin, Napoleon, etc.

§ 83. *Air and Water.*—Component element of air; of water. Proportion of oxygen and nitrogen in the air. Relation of oxygen to life; to combustion; most abundant of all known substances. Properties of nitrogen; of hydrogen, weight of hydrogen.

§ 84. *Electricity and Magnetism.*—Illustrate the

References.—§ 82. Mansfield's American Education.

§ 83. Norton & Porter's First Book of Science, part 2; Science of Common Things, index; Reason Why, index.

Minerals ; Geography.

production of electricity, and properties of attraction and repulsion, by a piece of dry paper rubbed briskly with a piece of india-rubber. Conductors and non-conductors, lightning and lightning conductors, Franklin's kite.

Properties of the magnet. Magnetic needle, mariner's compass, horseshoe magnet, telegraph.

§ 85. *Minerals*.—Oral exercises on the following topics, with illustrations as far as specimens can be obtained :

Common quartz, quartz crystal, common limestone, marble, coral, gypsum, soapstone, anthracite coal, bituminous coal, slate, clay, loam, gravel, etc., together with various stones used for ornament, as agate, topaz, carnelian, amethyst, emerald, and some of the compound rocks, as granite, sandstone ; kinds of stone employed in buildings, sidewalks, etc. ; bricks, quicklime, mortar.

§ 86. *Geography*.—"In the progress of every successive lesson, the teacher should call in the aid of association, by naming the products and staple commodities of the several States, historical facts, remarkable curiosities, high mountains, manufactories,

References.—§ 84. Child's Book of Nature, part 3 ; Norton & Porter's First Book of Science, part 1 ; Science of Common Things, index ; Reason Why, index ; Barnard's Object Teaching, art. 4 ; Brande's Cyclopædia.

§ 85. Fireside Philosophy, index ; Mayo's Lessons on Objects ; Brande's Cyclopædia ; Webster's and Worcester's Quarto Dictionaries.

§ 86. Northend's Teacher's Assistant, letter 16.

Third Grade.

etc., occasionally naming each separately. Say—this is a lumber State, this a wheat State, cotton State, sugar, tobacco, rice, etc. Here is gold; there lead, iron, coal, etc. Then pointing, review interrogatively—what State? its capital, rivers, mountains? What productions here? What in this? This,” etc.*

§ 87. *Map Drawing*.—The first steps in map drawing should consist of a series of exercises similar to the following:†

(1.) At a given signal let every member of the class draw on the blackboard or slate a continuous straight line, of any length, and in any direction; a second; a third; a fourth; a fifth. In the same manner, let five dotted lines be drawn. At successive signals, let all the pupils place ten points on the slate or blackboard, without any reference to each other. Now let all the pupils draw a straight line between any two of these points. This exercise should be continued, at successive signals, till all the points are connected.

(2.) The second exercise consists in making the

Reference.—§ 87. Calkins's Object Lessons.

* S. W. Seton.

† The directions for map drawing here given, have been kindly furnished by Messrs. Willard Woodard, Principal of the Jones School, Chicago, and E. C. Delano, Teacher of the Normal Department of the Chicago High School. Though brief, they are sufficiently full and explicit to enable teachers to introduce a systematic course of instruction in this important art,—an improvement greatly needed in nearly all the schools of the country.

Map Drawing.

pupils familiar with the smaller units of length, which may be done by the use of the common foot measure. Let the class, at a given signal, draw lines one foot in length, and teacher and pupils test the accuracy of the work by applying the standard. After successful trials, represent combinations of the standard in lines of two and three feet. Now let the pupils apply these units to space and objects in the room.

Again, let the pupils draw lines one foot in length, and divide each line into two equal parts; each of these parts into two other equal parts; continuing the division till the line has been divided into inches. Having a clear idea of the above units, assume points at the distance of an inch, a foot, two feet, and a yard, and let them be connected first by continuous lines, and afterward by dotted lines.

(3.) Let the pupils draw straight lines, of given lengths, in different directions, as vertical, horizontal, and oblique. These terms may be illustrated by reference to the walls and floor of the school-room.

(4.) The class should be required to combine straight lines in the formation of triangles—right, acute, and obtuse angled,—quadrilaterals and other rectilinear figures. After the first figure is drawn, other similar figures may be inscribed or circumscribed at given distances.

(5.) Draw curves and parallel curves of different degrees of curvature, and at different distances.

(6.) Around a given point, as a center, at a distance of one inch, let a circumference be drawn.

Third Grade.

Around the same center, at the distance of two inches, a second circumference; at the distance of three inches, a third. In this manner let successive circumferences be drawn until the distance from the center to the last is twelve inches. The exercise may be varied by increasing or diminishing the distances.

(7.) Let the above exercise be reversed.

(8.) The division of straight lines into equal parts by the application of a given scale, which should be represented on the board by each pupil.

(9.) The representation of the axes, poles, parallels, meridians, and zones of spheres of different diameters.

(10.) Representation of familiar surfaces, with objects on them, as the school-room, play-grounds, and fields.

(11.) Representation of mountains.

(12.) Representation of rivers.

(13.) Representation of coast lines.

All the foregoing exercises should be repeated till a high degree of accuracy and rapidity is secured. It is important that the first nine exercises should be performed simultaneously by all the members of the class.

Select a county or State having regular outlines. Select a scale with some convenient unit of measure. After determining the position of the cardinal points, draw two dotted lines at right angles to each other, one representing the central meridian, the other the central parallel. Apply the scale to the meridian as

Map Drawing.

many times as the distance represented by it is contained in the distance between the north and south points of the country to be drawn. Through the points of division, draw dotted lines at right angles to the meridian, which will represent parallels of latitude. Apply, in like manner, to the central parallel, such part of the scale as a degree of longitude is of a degree of latitude. Through the points of division draw dotted lines at right angles to the parallel. These will represent meridians. Designate the parallels and meridians by numbers expressing the position of points or places through which they pass, learned from an atlas.

The frame of the map being complete, represent by a dot the prominent points of the boundary, the latitude and longitude of which have been previously learned. Having fixed in the mind the nature and direction of the bounding line, it should be drawn wholly from memory. The boundary completed, the most prominent natural features should be represented.

The pupil now has before him a map of his own construction, in which he can not fail to be interested. See, also, § 80.

§ 88. In illustration of the foregoing principles we will proceed to draw a map of Europe, the most irregular and difficult of all the Grand Divisions.

The pupils having been thoroughly drilled in the application of latitude and longitude, and the relative length of a degree of longitude in different latitudes, the following prominent points in the bounda-

Third Grade.

ries of Europe should be written by the teacher on the blackboard and copied by the pupils into a blank book for preservation, to be committed to memory in lessons of five or ten each, according to the ability of the class. Commencing at

	Lat.	Lon.
North Cape.	71° N.,	26° E.
The Naze	58 "	7 "
Tornea	66 "	24 "
St. Petersburg	60 "	30 "
Lubeck	54 "	11 "
Mouth of the Elbe	54 "	9 "
Brest	48 "	4½ "
Bayonne.	43 "	1½ "
Ortegal	44 "	8 "
Straits of Gibraltar	36 "	5 "
Genoa	44½ "	9 "
Cape Spartivento	38 "	16 "
Venice	45 "	12 "
Cape Matapan	36 "	22 "
Constantinople	41 "	29 "
Sevastopol	44 "	33 "
Intersection of Caucasus		
Mts. and Caspian Sea	40 "	50 "
Northeast point of Ural Mts.	67 "	60 "
Mouth of Ural River	47 "	52 "
Mouth of Volga River	46 "	48 "

The above points are deemed sufficiently accurate for practical purposes, not differing from the true position more than one half of a degree.

Map Drawing.

Teachers will increase or diminish the number of points at their discretion; but care should be taken not to burden the memory with more numbers than are really necessary to secure accuracy in the form of the map. Some teachers would have more points fixed in the map of Europe than the number here given. Very few maps require more than half as many of these points as the map of Europe.

Suppose the first lesson to be a map of the coast line from Cape North to St. Petersburg. The points essential to this exercise are Cape North, The Naze, Tornea, and St. Petersburg.

The latitude and longitude of these points having been learned, recitation may be required in the following manner:

Cape North is situated 21° N., 26° E. The general direction of the coast line is southwesterly to The Naze at the south point of Norway, with many small indentations; thence northeasterly to Christiana, coast line regular; thence southeasterly to the most southern point of Sweden, very regular. The position of the remaining points and the regularity and direction of the coast line should be learned and recited in a similar manner.

The class is now prepared to draw. First each pupil draws upon the board a vertical line called the scale, representing 5° or 10° of latitude, according to the size of the map. A dotted vertical line should now be drawn representing the central meridian in Europe, the 20th degree. Supposing our scale to represent 5° of latitude, the most southerly point

Third Grade.

being about 35° , the most northerly 70° , the difference will contain seven spaces of 5° each; hence there will be eight parallels. Now divide the meridian into seven equal parts, each equal in length to the scale assumed, and draw dotted curved lines through the points of division, representing parallels of latitude. Next draw the meridians. On the parallel of the 70^{th} degree, a degree of longitude is nearly one-third of a degree of latitude. The most easterly point being in longitude 60° , and the most westerly nearly 10° W., there will be eight spaces and eight meridians east of the meridian of 20° , and two spaces and two meridians west of it.

Now set off on the parallel of 70° , eight spaces equal to one-third of the scale, east of the meridian of 20° , and two on the west. A degree of longitude on the parallel of 35° is $\frac{4}{5}$ of a degree of latitude, nearly. Now proceed to lay off the same number of spaces as before, each being $\frac{4}{5}$ of the scale, and connect the parallels of 70° and 35° with straight or curved dotted lines.

The frame being completed, let the points learned and described be located with dots and connected with lines, in conformity with the description previously given. After the class has acquired the ability to represent with accuracy and rapidity the first lesson, another section of the boundary, together with that previously drawn, should be assigned for the next lesson. Let successive sections be assigned until the outline is completed. The teacher can not overestimate the value of rapid exe-

Grammar and Composition.

cution in map drawing, which is attainable only by frequent reviews.

The mode of representing lakes, rivers, mountains, and prominent towns, will be readily suggested to the teacher.

§ 89. *Grammar and Composition.*—One of the most common faults in teaching grammar, is that of requiring pupils to commit too many rules and observations to memory. The most important principles only should be learned and recited directly from the text-book, and always in connection with illustrative examples furnished by the pupils. The less important principles, embracing more than half of the remarks, observations, etc., of the different school-grammars, should be learned chiefly as they are called into use by the grammatical study of selected passages of prose and verse.

As fast as the principles of grammar are learned, let the pupils be required in all cases to embody them in sentences of their own construction. The ability to use language correctly, and the demonstration of this ability by actual performance, should ever be regarded as the only satisfactory test of the pupil's attainments in this branch. "The art of speaking and writing correctly," is something more than "the art of knowing how to speak and write correctly." The knowledge of pupils is generally found to be far in advance of their practice. It is

References.—89. Mansfield's American Education, chap. 11; Page's Theory and Practice, chap. 7.

Third Grade.

true that most teachers give some attention to the language employed by their pupils, especially during recitations; but it would be a very great improvement if still more time was spent in cultivating habits of freedom and accuracy in the use of language. If one-fourth of the time usually devoted to the regular recitation in grammar was distributed through the day, and employed in cultivating the art of conversation, and propriety and elegance of expression on all occasions, the loss would prove a great gain.*

The rule adopted by Dr. Johnson deserves a place in the memory of every pupil. "Sir Joshua Reynolds once asked him by what means he had attained his extraordinary accuracy and flow of language. He told him, that he had early laid it down as a fixed rule to do his best on every occasion and in every company; to impart whatever he knew in the most forcible language he could put it in; and that by constant practice, and never suffering any careless

* "Unless the principles of the science are applied in daily practice, and fixed in the mind by habitual exercise, comparatively little is gained from theoretical study of the formulas and parts of speech. The ability to think clearly, and express one's thoughts elegantly and perspicuously, in one's own spoken or written words, is a great acquisition, and a rare one in our grammar schools."—*Report of School Committee, Lowell, Mass.*

"The deficiency alluded to is in the lack of appliances in our school studies and exercises for the proper cultivation of the faculty of expression."—*Isaac J. Allen, Superintendent of Schools, Cincinnati.*

"No teaching of grammatical rules will counteract the injurious effect of the frequent hearing and use of ungrammatical language."—*Report of Boston Committee.*

Reading.

expressions to escape him, or attempting to deliver his thoughts without arranging them in the clearest manner, it became habitual to him.”*

The oral lessons of the course should in all cases be regarded as exercises for the cultivation of the conversational powers of the pupils, and they should always be conducted with special reference to the accomplishment of this object.†

§ 90. *Reading*.—The standard of excellence in reading should be set a little higher in each successive grade. Pupils of the third grade should be able to read with good expression and effect in every variety and style. Take care that all the voices, especially those of the girls, are kept up to the proper

References.—§ 90. Northend's Teacher and Parent, chap. 23; Page's Theory and Practice, chap. 4; Bates's Institute Lectures, lect. 4; Holbrook's Normal Methods; Zachos's Analytic Elocution.

* Boswell's Life of Johnson.

† “Oral lessons cultivate in young people the talent of rational conversation, which, in ordinary education, is entirely left to chance, although it is the most useful, the most social, and the most intellectual of all talents. They impart that free excursive acquaintance with various learning which makes the pleasing and instructive companion; and if they were generally adopted, they would not fail, in the course of time, to raise the tone of conversation in society. The powers of language of the learners being constantly called forth in proposing and answering questions, in stating the results of their observations, and in making verbal or written summaries of the subjects on which they have conversed, they will necessarily acquire great facility of expression in connection with great clearness of thought. And if they excel in conversation, they have every prospect of success in public speaking.”—*Marcel on Language*.

Second Grade.

degree of loudness and force. Low voices should always be regarded as great defects in reading; and, except in cases of ill health, pupils who fail to make themselves plainly heard in every part of an ordinary school-room should receive marks of error. If pupils are inspired with a suitable degree of ambition to give the proper expression to the pieces they read, there will generally be very little difficulty in regard to fullness of voice.

§ 91. *Spelling*.—Spell one hundred or more words selected from the geography of the United States. Dictation exercises.

Write six or more exercises of entire paragraphs, selected from the “Review of the Market,” in one of the daily papers, including all the figures, abbreviations, etc. See, also, §§ 2 and 79.

Writing.—See § 3.

Arithmetic.—See §§ 71 and 81.

See, also, §§ 4, 6, 7, 9, 10, 12, 13, 14, 15, 16.

SECOND GRADE.

[GRAMMAR DEPARTMENT.]

REGULAR COURSE.

Oral Instruction.—Properties of matter; laws of motion, etc.; physiology and hygiene; morals and manners. The time devoted to oral instruction each week, to be equal in amount to fifteen minutes a day.

English grammar.

Reference.—§ 91. Northend's Dictation Exercises.

 Properties of Matter, etc.

Compositions, abstracts, and written reviews. •

Geography, to Asia, and reviewed, with map-drawing from memory. See §§ 87 and 88.

History of the United States, to the Revolution, and reviewed.

Fourth Reader (or corresponding number of the series) completed, with punctuation, definitions and illustrations, and elementary sounds.

Written and oral spelling, with definitions, from speller, and from reading lessons.

Writing.

Mental arithmetic completed and reviewed. Slate arithmetic through vulgar and decimal fractions, and reviewed. Extemporaneous exercises in combining series of numbers. See § 5.

Declamations and recitations.

Physical exercises, from two to four minutes at a time, not less than twice a day. See § 105.

DIRECTIONS.

Oral Instruction.—See §§ 8 and 18.

§ 92. *Properties of Matter, Laws of Motion, etc.*—In presenting the following topics, explain and apply the principles, and introduce illustrations when practicable: General properties of matter—extension, impenetrability, etc. Solids, liquids, gases. Inertia, different kinds of attraction, specific gravity, center of gravity, centripetal and centrifugal forces, flying, swimming, rowing, water-wheels, the action of powder in firing a gun, mechanical powers, the pendulum, air—its common properties and uses, pressure of the air, balloons and soap-bubbles, sailing a boat,

References.—§ 92. Norton & Porter's First Book of Science, part 1; Child's Book of Nature, part 3; Fireside Philosophy, index; Science of Common Things, index; Reason Why, index; Barnard's Object Teaching, arts. 2 and 4; Brande's Cyclopædia.

Second Grade.

flying a kite, suction-pump, siphon, barometer, friction.

§ 93. *Physiology and Hygiene, etc.*—Let the expansion and application of the following topics be continued and reviewed, till the pupils are able to sustain a satisfactory examination upon all of them: The blood, mastication, the teeth, saliva, digestion, chyme, chyle, nutrition, blood-vessels, structure and office of the heart, circulation of the blood through the system, impurities, waste of the system, how repaired, proper and improper food, eating too much, too fast, too often, late in the evening, irregularity of meals, dyspepsy, alcoholic drinks.

Structure and office of the lungs, respiration, capacity of the lungs, exercises for their healthy development, obstructed action, dangerous habit of bending over desks, process of purifying the blood, different colors; carbonic acid of the breath, how formed, amount, composition of carbonic acid, weight, relation to life, experiment of lighted candle in air that has been held in the lungs a few seconds, carbonic acid in wells, burning charcoal in close room, carbonic acid in the stomach, soda fountains, raising bread; ventilation.

Brief account of the bones, joints, muscles.

The hand. Men and animals compared.

References.—§ 93. Child's Book of Nature, part 2; Beecher's Physiology and Calisthenics, *passim*; Root's School Amusements; Science of Common Things, index; Fireside Philosophy, index; Reason Why, index; Calkins's Object Lessons; Barnard's Object Teaching, art. 4; Brande's Cyclopædia.

Physiology ; Topics.

Structure and office of the skin, sensible and insensible perspiration, importance of frequent bathing, danger from exposure to currents of air applied to the school-room.*

The brain, excessive use of ; nerves of sensation, of motion.

Physical exercise, its relation to health, kind and amount required.

Clothing, kind and quantity required to preserve health ; importance of frequent change ; danger from cold or damp feet.

Sleep, nature and uses, amount required, effect of sleeping too much, too little ; rising early, late ; retiring early, late ; ventilation of sleeping-rooms.

Recreation and amusement—relation to health. Importance of change and variety of mental labor.†

§ 94. *Reciting by Topics*.—One of the best modes of reciting history, geography, etc., is by the use of topics. Thus, in geography, a pupil passes to an outline map, drawn on the blackboard, with a set of topics in his hand, as boundaries, rivers, mountains, climate, surface, soil, productions, commerce, etc., and proceeds to describe the country assigned, stating all he recollects under each topic. When his description is completed, other members of the class are called on for corrections and additions, and the teacher makes such suggestions as the case may re-

* “Avoid a current of air as you would an arrow.”—*Chinese Proverb*.

† “The mind is as much refreshed by *variety* as by *idleness*.”—*Todd's Student's Manual*.

First Grade.

quire. This made of reciting by topics leaves the pupils in a great degree to their own resources, secures a more thorough and systematic preparation of the lessons, and furnishes important aid in imparting that discipline of mind which is more valuable than knowledge. It will be found particularly adapted to reviews.

Reading.—See §§ 1, 41, 50, 78.

§ 95. *Spelling.*—Spell one hundred words selected from the geography of South America and Europe; thirty words selected from the terms and definitions used in arithmetic; thirty from the lessons and definitions used in grammar. See, also, §§ 2 and 79.

Write five dictation exercises of paragraphs selected from the “Marine Journal” of a newspaper.

Writing.—See § 30.

Arithmetic.—See § 81.

See, also, §§ 4, 6, 7, 9, 10, 12, 13, 14, 15, 16, 89.

FIRST GRADE.

[GRAMMAR DEPARTMENT.]

REGULAR COURSE.

Oral Exercises.—Popular astronomy; elementary book-keeping; government; heat; geology; morals and manners. The time devoted to oral instruction each week to be equal in amount to fifteen minutes a day.

Grammar completed, with parsing and analysis from reading-book.

Reference.—§ 95. Northend's Dictation Exercises.

Popular Astronomy.

Compositions, abstracts, and written reviews.

Geography completed and reviewed, with map-drawing from memory, and use of terrestrial globe. See §§ 87 and 88.

History of the United States, completed and reviewed. Outlines of English history, with review.

Fifth Reader (or corresponding number of the series), with explanations, analysis of derivative and compound words, and elementary sounds.

Written exercises in spelling from reading lessons, and other words selected by the teacher. Analysis of derivative and compound words, and a few selected rules of spelling.*

Writing.

Slate arithmetic completed and reviewed. Extemporaneous exercises in combining series of numbers. See § 5. Difficult examples in mental arithmetic reviewed. See § 81.

Declamations and recitations.

Physical exercises, from two to four minutes at a time, not less than twice a day. See § 105.

DIRECTIONS.

Oral Instruction.—See §§ 8 and 18.

§ 96. *Popular Astronomy.*—Ten or more elementary lessons. The earth—its size and motions. Change of seasons—how caused; difference in the length of days and nights at different seasons of the year; length of the longest day at the equator;

References.—§ 96. Norton & Porter's First Book of Science, part 1; Child's Book of Nature, part 3; Fireside Philosophy, index; Brande's Cyclopædia; Brownell's How to Use Globes.

* "The rules for spelling derivatives are not very commonly learned in our schools, or if memorized they are not comprehended and practically applied. Certainly a large share of the bad spelling which I have witnessed is chargeable to a neglect of these rules."—*B. G. Northrop, Agent of Massachusetts Board of Education.*

First Grade.

tropics; polar circles; at the poles. Tides. Solar System. The sun—its office, distance, magnitude, spots. The moon—its size, distance, telescopic appearance, different phases; eclipse of the moon; of the sun. Name the planets in their order; relative size; satellites of each, and ring of Saturn. Morning and evening stars. Comets. Fixed stars. Teach the pupils to point out in a clear night five or more conspicuous constellations; five or more stars of the first or second magnitude; all the larger planets that are above the horizon.

§ 97. *Elementary Exercises in Book-keeping.*—A dozen simple exercises in single-entry book-keeping, illustrated by the teacher on the blackboard, and written out by the pupils, will be sufficient to enable them to keep ordinary accounts with a good degree of facility and accuracy; and pupils should never be allowed to pass through the Grammar divisions and leave school, without this knowledge.

§ 98. *Government.*—Seven or more elementary lessons on government, embracing the general structure of National, State, city, and town governments, and their relation to each other; government of United States, compared with that of Great Britain, Russia, Switzerland. Legislative, executive, and

References.—§ 97. Introduction to Mayhew's Book-keeping.

§ 98. Mansfield's Political Manual; Howe's Young Citizen's Catechism; Shurtliff's Governmental Instructor; Sheppard's Constitutional Text-book; Young's Science of Government; Brande's Cyclopædia, words *Jury*, *Homicide*, etc.; Webster's and Worcester's Quarto Dictionaries.

Government ; Heat.

judicial branches of government; origin of our National government; Declaration of Independence; Constitution; trial by jury. Terms *homicide, manslaughter, felony, arson, burglary, treason, perjury, forgery*, etc. Names of the principal sovereigns of Europe.

§ 99. *Heat*.—In expanding the following topics, explain and apply the principles, and illustrate them as far as practicable. Sources of heat; heating by conduction, radiation, convection. Sensation of heat and cold; burning-glasses; good and poor conductors; different kinds of clothing; double windows; ice-houses; use of a fan; protection of the ground by snow. Contraction and expansion; putting tire on a wheel; fire balloons; thermometer; glass cracked by hot water; why clocks go faster in cold weather than in warm; freezing water; heat absorbed by change from solid to liquid state, and from liquid to gaseous; freezing mixture of salt and ice; cooling a heated room by sprinkling water on the floor. Boiling water; how the force of steam is produced. Flame—how produced. Carbon. Flame of a candle—why no combustion in the center; wick—why not consumed; use of circular wick in astral and solar lamps; use of glass chimney; of small hole in top of lamp; gas used in lighting buildings; use of a blower in kindling a fire; action

References.—§ 99. Norton & Porter's First Book of Science, part 2; Science of Common Things, index; Reason Why, index; Barnard's Object Teaching, arts. 2 and 4; Brande's Cyclopædia.

First Grade.

of a common chimney; proper construction; advantages of stoves, as compared with open fireplaces; disadvantages.

§ 100. *Geology*.—Five or more oral lessons on the geological formation of the United States; coal fields; mineral ores; geology of the State in which the pupils reside; fossiliferous rocks.

§ 101. *Grammar and use of Language*.—At least half the time appropriated to Grammar in the first grade, should be spent in parsing and analyzing select pieces from Milton, Pope, and other authors, embracing several different varieties of style. The extracts required for this purpose may be selected from the reading-books.

No exercise should be regarded as complete and satisfactory that does not analyze the thought as well as the language of the writer.

Pupils of this grade should receive special instructions in letter-writing, including the form and manner of beginning and ending, with the date; paragraphs; dividing between syllables at the end of a line; margin; folding; superscription; sealing, etc. See, also, §§ 6 and 89.

§ 102. *Use of Globe*.—Pupils should receive so much instruction in the use of the terrestrial globe,

References.—§ 100. Norton & Porter's First Book of Science, part 2; Willson's Fifth Reader; Brande's Cyclopædia; Webster's and Worcester's Quarto Dictionaries; any of the Physical Geographies.

§ 102. McIntyre on the Use of the Globes; Keith on the Use of the Globes; Brownell's How to Use Globes.

Spelling, etc. ; Music.

that they will be able to solve by it, before the class, not less than five common problems ; as, To find the length of a degree of longitude at any given latitude : To find the hours of sunrise and sunset, and the length of day and night at a given place on a given day : To find how long the sun shines without setting, at any given place in the north frigid zone, and how long it is invisible, etc.

Reading.—See §§ 1, 41, 78.

§ 103. *Spelling and Analysis of Derivative Words.*—Spell one hundred names selected from the geography of Asia and Africa ; the names of fifty islands and groups of islands, situated in any part of the world. Dictation exercises. Special attention to the analysis of derivative and compound words. See §§ 2 and 79.

Writing.—See § 3.

Arithmetic.—See § 81.

See, also, §§ 4, 6, 7, 9, 10, 12, 13, 14, 15, 16, 93.

MUSIC.

§ 104. It is highly important that all the divisions in the Grammar and Primary Departments should have one or more regular lessons in vocal music every week. Each division should also have daily exercises in singing both devotional and secular pieces. In

References.—§ 103. Northend's Dictation Exercises ; Sanders's Analysis of English Words ; Town's Analysis of Derivative Words ; McElligott's Analytical Manual.

Promotions ; Physical Exercises.

the Primary divisions, singing should be interspersed among the other exercises several times a day.

CONDITIONS OF TRANSFER FROM ONE GRADE TO
ANOTHER.

No pupils should be advanced from one grade to another, till they are able to sustain a thorough and satisfactory examination, by the Principal, on all the branches of the grade from which they are to be transferred, including the oral lessons, use of slate, etc. They should be able to read any of the pieces they have gone over, with proper expression ; explain the meaning of any of the words ; give the names and uses of the different marks used ; and spell any of the words, both by letters and by sounds. In the Grammar divisions, the examinations should be both oral and written. When practicable, all promotions from one grade to another should be made at the commencement of a school month.

Whenever the scholarship of a pupil falls behind the rank of his class, he should be sent into the class next below, unless by extra effort he is able promptly to regain his position.

PHYSICAL EXERCISES.*

§ 105. The following exercises embody the result of many careful experiments, and are believed to combine the elements of the most useful movements that are adapted to the school-room. The best ef-

* Most of the "free gymnastics" here presented, have been kindly furnished by Messrs. S. H. White, Principal of the Brown School, Chicago, G. D. Broomell, Principal of the Dearborn School, and E. C. Delano, Teacher of the Normal Department of the High School ; assisted by three of the lady teachers.

Physical Exercises.

fects will generally be produced by executing them in order, from first to last; but teachers can at any time make selections from them, at their discretion.

The value of the exercises depends in a great degree upon the energy and force with which they are executed. In all the arm and shoulder movements, the muscles should be kept as rigid as possible, and the rapidity of the movements should not be so great as to prevent the utmost tension of the muscles. In all the body movements the motion should be full and slow.

The directions assume that the regularity and number of motions in each movement are fixed by counting, either by the teacher alone, or by both teacher and class, as may be desired. The number to be counted in the body movements may be eight; and in the others, when counted at all, twelve. In some cases, it may be thought desirable to duplicate the numbers.

The following positions are recommended, preparatory to the execution of the movements:

Position A, Sit erect, hands folded in front.

“ B, Turn to the aisle, preparatory to rising.

“ C, Rise and face the teacher.

References.—§ 105. Root's School Amusements; Potter & Emerson's School and Schoolmaster, part 2; Calkins's Object Lessons; Beecher's Physiology and Calisthenics; Barnard's Object Teaching, art. 1; Fitzgerald's Exhibition Speaker and Gymnastic Book; Trall's Family Gymnasium; Walker's Manly Exercises; De Laspee's Free Gymnastics; Alfonse's Instructions in Gymnastics; Dio Lewis's New Gymnastics.

Physical Exercises.

Position D, Stand erect, with arms akimbo.

“ E, Pupils resume their seats.

These positions may be used in dismissing school, when classes are called to recitation, and at all times when the scholars are called to rise from their seats.

While on the floor, the scholars should stand erect, with the shoulders thrown back, and, unless otherwise directed, with the hands hanging naturally at the sides.

NOTE.

Cases will sometimes occur in which pupils are affected with infirmities that render particular exercises injurious to them. Teachers should give watchful attention to this point, and never require pupils to join in any of the movements against the wishes of their parents.

The windows should generally be raised from the bottom during the physical exercises, so as to furnish a supply of fresh air. All pupils in health are expected to join in these exercises; but if, from ill health or other cause, any one is prevented from engaging in them, he should never be allowed to sit in a current of air.

MOVEMENTS.

(1.) Inhale slowly and fill the lungs to their utmost capacity; retain the air a few seconds, and then exhale slowly until the air is expelled as completely as possible. Six inspirations and expirations.

(2.) Place the clenched hands on the shoulders, the elbows being elevated sidewise to a horizontal line with them. At count *one*, throw the fists forcibly outward, so that the arms shall be in a horizontal position. At count *two*, bring the fists back to

Physical Exercises.

the shoulders, keeping them closed firmly during the whole movement. Count twelve.

(3.) Hands hanging at the sides, closed. Counting *one*, pass the fists in front of the shoulders, and raise them so that the arms shall be vertical; *two*, bring the fists down immediately over the shoulders, at the same time throwing the elbows downward and backward; *three*, throw the fists downward, commencing with a short curve by bending the wrists and raising the elbows. Count twelve.

(4.) Position D. At count *one*, incline the body to the right at an angle of 45° . At *two*, incline to the left in the same manner. Count eight.

(5.) Inflate the lungs suddenly with a full breath; retain the breath a short time, and then emit as quickly as possible. Five times.

(6.) Extend the arms forward a little above the horizontal, the fists being side by side, thumbs downward. At *one*, bring the fists immediately in front of the shoulders, turning the thumbs upward, and throwing the elbows downward and backward forcibly, as if to strike them together behind. At *two*, thrust the fists forward to the first position. Count twelve.

(7.) Position D. At *one*, thrust the right fist upward to a vertical position; at *two*, bring the right hand to position D, and then thrust the left fist upward in the same manner. Count twelve.

(8.) Hands hanging in front, clasped. At *one*, throw the hands to the right and as far behind as possible, at the same time turning the body in the

Physical Exercises.

same direction, but keeping the face and feet straight forward. At *two*, turn to the left in the same manner. Count eight.

(9.) Position D. Inhale a full breath slowly; emit the breath audibly and slowly, giving the prolonged sound of *a* in *father*.

(10.) Let the arms hang at the sides, hands open. At *one*, throw the hands outward and upward, keeping the arms extended, and bring the hands together directly over the head with a clap; keeping the hands together and arms extended; at *two*, bring the hands down in front to a level with the shoulders; at *three*, throw the hands backward, keeping the arms extended horizontally; at *four*, drop the arms to the sides as in position of starting. Count twelve.

(11.) Position D. At *one*, rise on the toes as far as possible; at *two*, ease back to starting position, being careful to avoid dropping noisily on the heels. Count twelve.

(12.) Hands hanging at the sides, closed. At *one*, bring the fists up under the arms; at *two*, return them to first position. Count twelve.

(13.) Hands hanging naturally at the sides. At *one*, raise both shoulders as forcibly and as high as possible. At *two*, lower them gently. Count twelve.

This exercise may be varied by raising and dropping first one shoulder six times and then the other six; or by raising and dropping one shoulder once and then the other once, alternating to count *twelve*.

Physical Exercises.

(14.) Position D. Thrust the right fist forward, horizontally, while counting *one*. At *two*, bring the right hand back to position D, and then thrust the left fist forward in the same manner. Count twelve.

(15.) Bring the fists together upon the chest, immediately between the shoulders, at the same time elevating the elbows above the horizontal, and bringing them as far forward as possible. At *one*, throw the elbows downward and backward with force, and at *two*, bring the fists and elbows as at first. Count twelve.

(16.) Position D. At *one*, turn the whole body, including the head, to the right as far as possible, keeping the feet stationary. At *two*, twist the body toward the left in the same manner. Count eight.

(17.) Place the fists upon the shoulders, with the elbows raised sidewise to a horizontal with them. Throw the right fist outward and upward at an angle of 45° , counting *one*. At *two*, bring it back to its former position, at the same time throwing out the left in the same manner. Keep the muscles as rigid as possible. Count twelve.

(18.) Position D. At *one*, look over the right shoulder, at the same time bending the body backward and twisting sidewise sufficient to allow a downward glance as at the heels. At *two*, look over the left shoulder in the same manner. Count eight. This movement calls into exercise more of the muscles of the body than any of the others, and should be thoroughly executed.

(19.) With the left hand upon the hip, whirl the

Physical Exercises.

right hand and arm in as near a vertical plane as the situation of the scholar will allow, first forward, then backward. Then with the right hand upon the hip, whirl the left in the same manner. Let each arm be whirled six times in both directions, counting at each time.

(20.) Place the fists upon the shoulders, with the elbows raised in front to a level with them. At *one*, throw the fists suddenly forward, keeping the arms horizontal and opening the hands, palms upward. At *two*, place the fists as before. Count twelve.

(21.) Hold the right palm in front of the eyes, at the distance of about a foot from them, and the left palm similarly, opposite the lower part of the chest. At *one*, change positions of the hands; *two*, reverse, and so on till twelve is counted.

(22.) Position D. At *one*, incline the body forward as in a low bow, and at *two*, incline backward to the same extent. Count eight.

(23.) Inhale slowly. Exhale suddenly and forcibly, with the sound of the letter A. Three times.

In movements 1, 5, 9, 13, 23, the length of time to be occupied by each inhalation should be indicated by some signal, as the raising and lowering of the teacher's hand; the raising of the hand being the signal for the inhalation, and the breath being retained while the hand is kept up, and sent out as the hand is lowered.

Other movements, selected from works on gymnastics, or devised by the teacher, or combined from the foregoing, may be introduced, as the taste and

Physical Exercises.

ingenuity of the teacher may direct. The following is given as an example of several movements combined in one exercise :

(24.) Hands hanging at the sides, closed. At *one*, bend the elbows and describe a curve with the hands, by bringing them up in front of the chest and head, and over outward, so that the arms will come to the horizontal, sidewise ; *two*, bring the fists against the upper and outer portions of the chest ; *three*, throw the right fist forward to the horizontal ; *four*, bring it back against the chest again ; *five* and *six*, describe the same movements with the left arm ; *seven* and *eight*, the same with both arms ; after which the fists are to be thrust downward to the sides, as at first, with count *one*. The same movement may be repeated, always giving the same numbers to the same parts of the movement. The second time the fists are brought down to their first position, it should be with count *two* ; the third time, *three*, and so on. The advantage of this is, that at the close of the repetitions, say nine, the class will all stop at once and there will be no break in the exercise.

(25.) *Marching*.—All the lower divisions should have exercises in marching as often as once or twice a day. By exercising a little ingenuity, the teacher will be able to arrange the files so that all the pupils will commence marching at the same time, and end at the same time. The children should keep together in their time, and this should be regulated by appropriate singing. If the singing can not be se-

Physical Exercises.

cured, the pupils may repeat verses in concert, and march to the measure of the poetry.

(26.) *Military Movements*.—Occasional exercises in marching, counter-marching, facing, dressing, and halting, with military precision, may be profitably introduced. They will not require the use of arms nor any substitute for them. For full directions respecting these movements, teachers are referred to Root's School Amusements, and The Boy Soldier, by the same author.

§ 106. Teachers should guard their pupils against all constrained and unnatural postures. The position "*hands behind*" induces a stooping posture, and should generally be avoided.* The habit of stooping over desks while engaged in exercises requiring the use of the pen or pencil, is one of the most serious evils now existing in schools, and its deleterious influence upon the health and form of pupils is abundantly manifest.

It is true that many teachers devote special attention to this matter, but in most cases the cure is by no means radical or permanent, and a more efficient and systematic course of treatment is required. There are many schools in which the pupils are required to give special attention to physical movements, at frequent and regular intervals, and yet lose more every day by indulging in this dangerous habit than they gain by the gymnastic exercises.

* See Report of S. W. Seton, Assistant Superintendent of Schools, New York, 1856.

Habit of Stooping.

As a first step toward the correction of this evil, teachers should inform themselves and their pupils of its nature and magnitude. The next step of progress should be a firm resolve to overcome it, whatever may be the effort required.

With most pupils, a frequent admonition from the teacher will be sufficient to establish the habit of sitting erect, and when this habit is once formed, very little attention will be needed to perpetuate it.

But when this measure is found to be ineffectual, a persistent habit of stooping at the desk should be treated as a misdemeanor, affecting the deportment average of the pupil the same as any other example of misconduct.*

* "The training of children in sitting, standing, and walking, and in the use of the organs of respiration and of utterance, are among the first things to be attended to in the physical education at school."—*John D. Philbrick, Superintendent of Schools, Boston.*

COURSE OF INSTRUCTION

FOR A

HIGH SCHOOL,

EMBRACING

A GENERAL COURSE

AND

A CLASSICAL COURSE.



THE circumstances of different cities and towns are so various, that it is impossible to devise a course of study equally adapted to all high schools.

The following outline embodies substantially the course adopted in the Chicago High School. Some of its features have been borrowed from the course of study adopted in Philadelphia, St. Louis, Cincinnati, Boston, and other cities, and some of them are the fruit of observation and experiment during a period of six years.

The greatest danger, even with the time extended to four years, is that of crowding too much labor into each period of the course. It is not always sufficient to arrange the course so that pupils will not be required to carry a large number of studies at a time. Cases will frequently arise in which certain

Length of Course.

portions of a text-book may, without serious loss, be either omitted altogether, or used only for occasional reference. These should by all means be marked in the class, and treated accordingly. A reasonable amount well learned, is better than more learned imperfectly; and either of these is far better than the highest intellectual acquisitions obtained in exchange for good health.

When the time of the course is reduced to three years, still greater care will be required to avoid tasking pupils beyond their strength, and to prevent them from overtasking themselves. The tendency to this evil will be greatly diminished, if pupils can be retained in the grammar schools till they are thoroughly prepared to enter the high school. No pupil should be received to the high school under twelve years of age, and in many cases thirteen years would be a better limit to establish.

The highest standard of requirement in all the classes should be attainable by pupils of average capacity, without the necessity of studying during hours required for exercise and relaxation. But in attempting to remove the evil of overtasking pupils, we should remember that there is also danger of falling into the opposite extreme. If pupils are tasked beyond their strength, the school is justly chargeable with blame. But if the standard is dropped so low that it fails to stimulate the scholars to habits of thoroughness and self-reliance, then is the school itself a failure, and every community would so regard it.

General Department.

HIGH SCHOOL.

SYNOPSIS OF THE GENERAL COURSE.

FIRST YEAR.

FIRST TERM.—Algebra ; German or Latin ; Descriptive Geography.

SECOND TERM.—Algebra ; German or Latin ; English Grammar and Analysis.

THIRD TERM.—Arithmetic ; German or Latin ; Physical Geography.

SECOND YEAR.

FIRST TERM.—Algebra ; German or Latin ; Universal History.

SECOND TERM.—Geometry ; German or Latin ; Universal History.

THIRD TERM.—Geometry ; German or Latin ; Universal History ; Botany.

THIRD YEAR.

FIRST TERM.—Geometry ; German, or Latin, or French ; Physiology ; Rhetoric.

SECOND TERM.—Trigonometry ; German, or Latin, or French ; Natural Philosophy ; English Literature.

THIRD TERM.—Mensuration, Navigation, and Surveying ; German, or Latin, or French ; Natural Philosophy ; English Literature.

FOURTH YEAR.

FIRST TERM.—Astronomy ; German, or Latin, or French ; Intellectual Philosophy ; Constitution of United States and Book-keeping.

SECOND TERM.—Chemistry ; German, or Latin, or French ; Logic ; Political Economy.

THIRD TERM.—Geology and Mineralogy ; German, or Latin, or French ; Moral Science ; Political Economy.

Drawing during the second, third, and fourth years. Such attention to reading, spelling, and penmanship, through the course, as may be necessary to secure satisfactory attainments in these branches. Rhetorical exercises, music, and physical exercises through the course.

Classical Department.

At the beginning of the third year, those in the General Department are allowed to continue their Latin or German, or choose French instead, for the remainder of the course. Thus no pupil in the General Department studies more than one foreign language at the same time, and all are permitted to take two at some time in the course, if desired.

Those pupils who elect to take Latin during the first and second years, can defer their choice between the Classical and the General Course till the commencement of the third year.

SYNOPSIS OF THE CLASSICAL COURSE.

FIRST YEAR.

FIRST TERM.—Algebra ; First Latin Book ; Descriptive Geography.

SECOND TERM.—Algebra ; First Latin Book ; English Grammar and Analysis,

THIRD TERM.—Arithmetic ; Latin Reader ; Physical Geography.

SECOND YEAR.

FIRST TERM.—Algebra ; Latin Reader ; Universal History.

SECOND TERM.—Geometry ; Cæsar ; Universal History.

THIRD TERM.—Geometry ; Cæsar ; Universal History ; Botany.

THIRD YEAR.

FIRST TERM.—Greek ; Cæsar or Cicero ; Physiology.

SECOND TERM.—Greek ; Cicero ; Natural Philosophy.

THIRD TERM.—Greek, Anabasis ; Cicero ; Natural Philosophy.

FOURTH YEAR.

FIRST TERM.—Greek, Anabasis ; Virgil, Eclogues ; Cicero ; Latin Prose.

Forms of Organization.

SECOND TERM.—Greek ; Virgil, *Æneid* and *Georgics* ; Latin Prose.

THIRD TERM.—Greek, *Iliad* ; Virgil, *Æneid* ; Review of Latin.

Drawing during the second, third, and fourth years. Rhetorical exercises, music, and physical exercises through the course. Such attention, through the course, to reading, spelling, and penmanship, as may be necessary to secure satisfactory attainments in these branches. Classical antiquities, military affairs, during the second year. Classical antiquities, civil affairs, during the third year. Classical antiquities, mythology, during the fourth year. Ancient geography, in connection with the literature and history of Greece and Rome.

DIFFERENT FORMS OF ORGANIZATION.

In the organization of high schools, three different forms have been adopted by different cities and towns.

1. That which embraces a general course and a classical course in the same school ; the parents or guardians of the pupils being allowed to elect between the two courses.

2. A division into two distinct schools, an English high school, and a classical school, each independent of the other.

3. A union of the two courses in one classical and English school, in which all the pupils are required to study both the English branches and the classics.

The first of these forms is illustrated by the course already presented, and by the course adopted in the St. Louis High School.

Boston English High School.

The second form is illustrated by the high schools of Boston.

The third form is illustrated by the high schools of Cincinnati.

COURSE OF STUDY
IN THE
ENGLISH HIGH SCHOOL,
BOSTON.

FIRST YEAR.

1. Review of preparatory studies, using the text-books authorized in the grammar schools of the city ; 2. Ancient Geography ; 3. General History ; 4. Algebra ; 5. French Language ; 6. Drawing.

SECOND YEAR.

1. Algebra, continued ; 2. French Language, continued ; 3. Drawing, continued ; 4. Geometry ; 5. Book-keeping ; 6. Rhetoric ; 7. Constitution of the United States ; 8. Trigonometry, with its application to surveying, navigation, mensuration, astronomical calculations, etc. ; 9. Evidences of Christianity,—a Monday morning lesson.

THIRD YEAR.

1. Trigonometry, with its applications, etc., continued ; 2. Evidences, continued,—a Monday morning lesson ; 3. Drawing, continued ; 4. Astronomy ; 5. Natural Philosophy ; 6. Moral Philosophy ; 7. Political Economy ; 8. Natural Theology ; 9. English Literature ; 10. French, continued ; or the Spanish language may be commenced by such pupils as in the judgment of the master have acquired a competent knowledge of the French. Physical Geography is *permitted*.

Boston Latin School.

For the pupils who remain at the school the fourth year, the course of study is as follows :

1. Astronomy ; 2. Intellectual Philosophy ; 3. Logic ; 4. Spanish ; 5. Geology ; 6. Chemistry ; 7. Mechanics, Engineering, and the higher mathematics, with some option.

The several classes shall also have exercises in English composition and declamation. The instructors shall pay particular attention to the penmanship of the pupils, and give constantly such instruction in spelling, reading, and English grammar, as they may deem necessary to make the pupils familiar with these fundamental branches of a good education.

COURSE OF STUDY

IN THE

LATIN HIGH SCHOOL,
BOSTON.

FIRST YEAR.

1. Latin Grammar ; 2. English Grammar ; 3. Reading English ; 4. Spelling ; 5. Mental Arithmetic ; 6. Geographical Questions ; 7. Declamations ; 8. Penmanship ; 9. Latin Lessons ; 10. Latin Reader.

SECOND YEAR.

1, 2, 3, 4, 7, 8, continued. 11. Viri Romæ ; 12. Written Translations ; 13. Arithmetic ; 14. Cornelius Nepos ; 15. Latin Prose Composition.

THIRD YEAR.

1, 2, 3, 4, 7, 8, 12, 13, 15, continued. 16. Greek Grammar ; 17. Greek Lessons ; 18. Cæsar's Commentaries ; 19. French Grammar ; 20. Exercises in speaking and reading French, with a native French Teacher.

Cincinnati High Schools.

FOURTH YEAR.

1, 2, 3, 4, 7, 8, 12, 13, 15, 16, 19, 20, continued. 21. Ovid's *Metamorphoses*; 22. Greek Prose Composition; 23. Greek Reader; 24. Algebra; 25. English Composition; 26. *Le Grandpère*.

FIFTH YEAR.

1, 2, 3, 4, 7, 8, 15, 16, 19, 21, 22, 23, 24, 25, continued. 27. Virgil; 28. Elements of History; 29. Translations from English into Latin.

SIXTH YEAR.

1, 7, 15, 16, 19, 20, 21, 22, 23, 25, 27, 28, 29, continued. 30. Geometry; 31. Cicero's Orations; 32. Composition of Latin verses; 33. Composition in French; 34. Ancient History and Geography.

The instructors shall pay particular attention to the penmanship of the pupils, and give constantly such instruction in spelling, reading, and English grammar, as they may deem necessary to make the pupils familiar with those fundamental branches of a good education.

COURSE OF STUDY

IN THE

CINCINNATI HIGH SCHOOLS.

FIRST YEAR.

FIRST SESSION.—Latin Lessons, with Latin Grammar, five lessons per week; English History, five lessons per week; Algebra, five lessons per week.

SECOND SESSION.—Latin Lessons, with Latin grammar, five lessons per week; Anatomy and Hygiene, five lessons per week; Latin Grammar, five lessons per week; Algebra, five lessons per week; Lectures by Principal, on Morals, Manners, etc., once per week, during year; Rhetoric, once per week, during year; Reading and Vocal

Cincinnati High Schools.

Music ; Composition and Declamation, by Sections, once in three weeks.

SECOND YEAR.

FIRST SESSION.—Latin Lessons completed, with Latin Grammar, five lessons per week ; Geometry, five lessons per week ; Natural Philosophy, to Pneumatics, five lessons per week.

SECOND SESSION.—Cæsar, three Books, or Sallust, one Book, four lessons per week ; Geometry, to Book IX., five lessons per week ; Natural Philosophy, completed, five lessons per week ; Reading, Elemental Sounds, one exercise per week ; Rhetoric and Vocal Music, one exercise per week ; Composition and Declamation, by Sections, once in three weeks.

THIRD YEAR.

FIRST SESSION.—Chemistry, five lessons per week ; Virgil's *Æneid*, three Books, four lessons per week ; German or French, four lessons per week ; Algebra and Spherics, completed, five lessons per week.

SECOND SESSION.—Cicero, three Orations, four lessons per week ; German or French, four lessons per week ; Chemistry, five lessons per week ; Trigonometry, completed, five lessons per week ; Constitution of the United States, completed, one exercise per week ; Reading, Rhetoric, and Vocal Music, one exercise per week ; Composition and Declamation, by Sections, once in three weeks.

FOURTH YEAR.

FIRST SESSION.—Horace, five Satires and the *Ars Poetica*, four lessons per week ; German or French, four lessons per week ; Astronomy completed, five lessons per week ; Physical Geography and Geology completed, five lessons per week ; Moral Philosophy, by Lectures, one exercise per week ; Logic, completed, one exercise per week.

SECOND SESSION.—German or French, four lessons per week ; Mental Philosophy, completed, five lessons per week ; General History, completed, five lessons per week ; Navigation and Surveying, completed, five lessons per week ; Evidences of Christianity, by Lectures, one exercise per week ; Critical Readings, Vocal Music, one exercise per week ; Composition, by Sections, once in three weeks ; Original Addresses.

Examinations.

COLLEGE CLASS.

In view of preparation to enter college, this class is permitted to substitute the following studies for the regular ones, in the fourth year :

Greek Grammar, completed ; Greek Reader, completed ; Cicero's Orations, six in number ; Virgil's *Æneid*, six Books ; Cæsar or *Salust*, completed.



ADMISSION TO HIGH SCHOOLS.

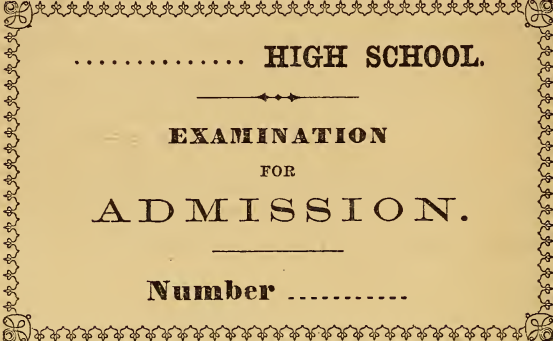
John S. Hart, LL. D., formerly principal of the Philadelphia High School, is entitled to the credit of having first perfected a thorough and satisfactory system of examining candidates for admission to a high school.* The main features of the method employed by Mr. Hart in the Philadelphia High School, nearly twenty years ago, have since been extensively adopted, with various minor changes, in all parts of the country.

The following is an outline of the form of examination adopted in Chicago.

On the morning of the examination a card is presented to each candidate, with a number written on it by which the candidate is known during the day. On the back of this card are printed several directions and explanations.

* The Reports of Mr. Hart, for the years 1846 and 1850, were documents of uncommon value, containing elaborate and graphic sketches of the organization and management of a large high school, with an extended course of study.

Examinations.



..... HIGH SCHOOL.

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EXAMINATION

FOR

ADMISSION.

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Number

DIRECTIONS TO CANDIDATES.

1. Throughout the examination, you will be known only by the number on the opposite side of this card.
2. Do not write your name upon any of your exercises.
3. Write your number very plainly at the upper left-hand corner of each exercise; your age in years and months at the upper right-hand corner; and the date in the middle, so that they will all be on the same line.
4. You can make any use of slates and pencils while preparing your answers; but the answers on the paper which you pass in must all be written in *ink*.
5. Number each answer to correspond with the number of the question, leaving for this purpose a margin on the left of each page.
6. Avoid all communication with other candidates.
7. Be careful not to lose this card. Candidates admitted will bring their cards with them at the opening of the school.

Admission to High School.

Small slips of paper are next distributed among the candidates, on which they write their names and the numbers on their cards. These papers are collected and immediately locked in one of the desks till after the Board has decided on the admissions. They are then used to identify the successful applicants.

After attending to these preliminaries, the candidates are distributed in different rooms, and arranged at separate desks, so as to prevent, as far as possible, any opportunity for communication with one another. Each candidate is furnished with a slate and pencil, and with pen, ink, and paper. The questions for the first exercise, previously prepared by the superintendent, or by the teachers of the high school, are now distributed at the same moment in all the rooms, and the candidates are allowed a definite time to write out their answers,—usually from an hour to an hour and a half, according to the number and difficulty of the questions. Every effort is made to put the candidates as much at ease as possible, and to secure them from all unnecessary embarrassment. If they do not understand any of the requirements, or lack any little convenience for writing out their work, they are requested to make known their difficulties with the utmost freedom. When the time appointed for the first exercise expires, the answers written by the candidates are collected together, whether completed or not, and the next set of questions is distributed as before, and so on, through the day.

Admission to High School.

Besides the teachers of the high school, on whom the examination chiefly devolves, one or more members of the Board of Education and the superintendent are also in attendance during a portion or all of the examination, but no other spectators are admitted.

Most of the labor still remains to be performed, after the candidates are dismissed. Several days are now spent by the teachers in examining the papers that have been written. Every answer is read with care, and its value, estimated on a scale of 100, is marked in the margin. The sum of these estimates standing against the several answers on any one paper, divided by the number of questions assigned, gives the *average* for that exercise. The *averages* of each candidate, in all the different branches, are set against the card-number by which he is known during the examination; but the averages in arithmetic and English grammar are multiplied by two when they are entered, because the examination in these branches affords a safer test of the candidate's ability to sustain a position in the high school than the examination in branches that are more mechanical, or that depend more upon the pupil's memory, and less upon his powers of reasoning and judging. The sum of the averages now standing against any number, divided by the number of branches increased by two, gives the *general average* of the candidate designated by this number. To render the result of the examination still more reliable, the teachers usually select the papers of all the candidates whose general

Admission to High School.

averages are within five or ten per cent. of the lowest rank that will probably be admitted, whether above or below, and revise the estimates with special care. This measure insures the correction of any slight errors that may have occurred in estimating the answers of any candidate who could possibly be affected by such errors. The names of the candidates are never seen by any one, from the time when they are received on the morning of the examination till after this revision of estimates, and the final decision of the Board upon the admissions.

As the question of a candidate's admission or rejection depends entirely upon the *general average* of his examination, it is hardly possible that injustice should be done to any of the applicants. There are frequent cases in which candidates are not able to do justice to *themselves*; and these instances would be far more numerous if the examinations were conducted orally. A large number and variety of experiments have been tried by different boards of examiners, and they have almost invariably resulted in the decision that written examinations afford the most reliable test of qualifications, and are on the whole the most just and satisfactory to all parties.

If any instance occurs in which an applicant is supposed to be rejected for insufficient reasons, the answers on which this rejection is based are always on file at the school, or at the office of the Board of Education, in the applicant's own hand, and can be examined at any time by the candidate or his friends.

School Records.

In estimating the examinations in reading, each candidate is requested to read two short passages, one in poetry and one in prose. The estimates in penmanship are based upon the written answers that are given in other branches.

SCHOOL RECORDS.

[The importance of securing greater uniformity in school statistics has long been felt, and numerous educational reports have sent out earnest calls for improvements in the methods of making and preserving school records. The report of Cincinnati for 1856, by A. J. Rickoff, Esq., Superintendent of Schools, contained several valuable recommendations on this subject.

The following views were embodied in the author's annual report for 1858-9, in the hope that by presenting in tangible form the leading objects to be sought, and offering a few practical suggestions respecting the best means to be employed, one step of actual progress would be made in lessening the evils that existed. Several important efforts in the same direction have since been made by school officers and educational conventions, and it is now safe to say that considerable progress has been made toward the accomplishment of the desired end.]

THE subject of school records demands more careful attention from teachers and school directors than it has hitherto received. If the records of a school are properly kept, in the hands of a judicious teacher they become an important auxiliary to the healthful discipline and progress of the school, and at the close of a term or year the general summaries and averages afford valuable information respecting the character and success of the school, and its just claims to continued favor and support.

In many schools the records are so meager or so

School Records.

inaccurate that very little practical benefit can be derived from them. In others they are so complicated and minute, that teachers find it impossible to devote the time required by them, without neglecting other important duties.*

Such records only should be required as will be of some practical value or general interest, and the greatest care should be taken to make the directions for keeping them so plain and explicit that even an inexperienced teacher, with ordinary care, will be in no danger of falling into errors.

The three essential elements of the records which are designed more particularly to aid the teacher in raising the standard of scholarship and discipline, are *attendance*, *scholarship*, and *deportment*.

In respect to the records from which the general summaries are prepared at the close of the year, it is to be regretted that so little uniformity exists in different cities and towns. The practice of exchanging school reports now prevails in all parts of the country, and comparisons are constantly made respecting the cost of instruction, regularity of attendance, etc.; but the data from which these results are obtained are so different in different places that the comparisons, in a majority of cases, are entirely unreliable. In one city or town the cost of instruction

* "School statistics are far inferior, in completeness and accuracy, to the commercial, manufacturing, and agricultural statistics of the day. It ought not to be so, for certainly the products of the school-room can vie in value with the products of the farm or the factory."

—A. J. Rickoff, *Superintendent of Schools, Cincinnati*.

School Records.

for each scholar is based on the *average number enrolled* during the year, and in another on the *whole number*. In one, the cost of instruction embraces all the expenditures for school purposes, including permanent investments; in another, it includes the current expenses for tuition, supplies, and repairs, together with five or six per cent. on the whole valuation of the school estates, which is regarded as rent; and in a third it includes only tuition, supplies, and repairs.

In one city or town, a pupil who is absent from school a single week, is marked as *left*, and his absences no longer affect the attendance averages. In another, the name of a pupil is crossed from the roll when he has been absent two weeks; in another, when he has been absent a month; and there are instances in which the absences continue to count to the end of the term, even though the pupil may have left at the close of the first week.

Of the various statistical results which are embodied in the reports of different cities and towns, the following are generally regarded as the most important:

1. Average number belonging.
2. Average daily attendance.
3. Per cent. of daily attendance on average number belonging.
4. Whole number of different scholars.
5. Expense per scholar on average number belonging.

The first of these, the *average number belonging*,

School Records

is, in many respects, the most important of the five. It is the basis of all reliable estimates in regard to the accommodations required, the number of teachers, and the expense of sustaining the schools.

The point which chiefly concerns us in this connection, is the condition on which a pupil shall forfeit his seat in school. If we can secure uniformity of practice in this particular, one important object will be accomplished. In the public schools of Chicago, when a pupil is suspended from school by any of the rules of the Board of Education, he is recorded as having left, and in all other cases, when a pupil is absent more than five consecutive school-days, he is recorded as having left—the date of leaving being at the close of the fifth day. This rule is adopted, not because we have any very strong preference for the exact period of one week, but because this limit is found on trial to be as convenient as any other, and because it is the period adopted in many other cities.

The second item of the foregoing list, *average daily attendance*, is easily obtained, and the practice of different cities and towns is nearly uniform in regard to it.

The per cent. of daily attendance on the *average number belonging* is, in most cases, a pretty safe index to the general character and progress of the school. The accuracy of this result depends mainly upon the accuracy of the record from which the *average number belonging* is obtained.

The *whole number of different scholars*, when com-

School Records.

pared with the *average number belonging*, shows approximately the per cent. of changes that take place in the membership of a school. This per cent. varies greatly in different places.

The *cost of instruction per scholar* is an item of special importance, and it is to be regretted that so little uniformity has heretofore prevailed in respect to the manner of obtaining it. That this estimate should properly be based on the *average number belonging*, and not on the *whole number of different scholars* during the year, nor on the *average daily attendance*, must, I think, be evident to any one who will carefully examine the subject. The *whole number of different scholars* may vary from year to year to any extent, without affecting materially the number of seats required, or the number of teachers, or the actual expense of sustaining the schools, provided the *average number belonging* remains unchanged. In a city having accommodations for 10,000 scholars, the whole number of different pupils may be swelled by constant changes to 20,000, without increasing the actual enrollment at any time beyond the original 10,000. If, now, we estimate the cost of instruction per scholar on the *whole number enrolled*, it will appear to be only one half as great as it would if the membership of the school remained unchanged. Here, then, is an apparent reduction of one half the cost of instruction per scholar, without any reduction whatever in the actual expenditures. The truth is, the city is taxed for the instruction of 10,000 children, and not for the instruction of 20,000, and the

School Records.

estimates should be made to correspond with the facts.

So also of the *average attendance*; it may be high or low, but so long as the *average number belonging* is the same, the labor and expense are but slightly affected. Each pupil enrolled as a member of the school, must have a seat, whether present or absent.

In some cases, two separate averages are made, one giving the cost per scholar on the *average number belonging*, and the other on the *whole number*. To this practice there can be no objection, as it will not be likely to mislead.

The foregoing suggestions respecting school records, are presented in the hope that they may contribute, in some degree, to the introduction of greater uniformity of practice in this important department of school economy.

At a meeting of the National Teachers' Association, held at Buffalo, in 1860, a valuable report on school statistics was presented by C. S. Pennell, Esq., of St. Louis, chairman of a special committee appointed for this object at a previous meeting. The following extracts are copied from Mr. Pennell's report:

"The committee have corresponded with superintendents and teachers, and have examined school reports as extensively as they have been able. They find the sentiment very prevalent that our school statistics, as now collected and presented, have far less value than they ought to possess; and they are compelled to believe this sentiment founded in truth. This does not, however, in the least diminish our estimate of the value of reliable records, nor weaken our confidence that our school records may serve a very valuable purpose. Theoretic views must be subjected to actual trial, and

 School Records.

the results of the trials can be presented in no better way than in statistical tables.

* * * * *

“The *record of attendance* must embrace the following particulars, and may be much extended.

“1st. *Whole number of pupils enrolled during the year.*

“This must not be confounded with the whole number in the district or town of legal age to attend school, as shown by the census.

“2d. *Number transferred during the year.*

“These names will have been entered twice, and their number must be deducted from the first item in order to give the number of different pupils that have attended during the year.

“3d. *Average number belonging to the school or town.*

“4th. *Average daily attendance.*

“In order that these statistics may possess value, *the original entries must be correct.* This, it is believed, has too often not been the case. The records required by committees and superintendents, instead of being few and simple, have often been complex and voluminous, and teachers seeing little use made of them, have grown negligent. The popular distrust which has arisen in consequence of carelessness, has been urged as an excuse for continued want of care. Cases are found in which the average attendance is greater than the whole number registered, and also greater than the number of seats in the building. Such want of care admits of no justification. Correctness is the demand of honesty.

“*The meaning of the several headings should be made perfectly obvious.* There is oftener fault in this particular than those who make the forms and reports are aware of.

* * * * *

“We believe the ‘average number belonging’ to be the proper number for all estimates of expenses, per cent. of attendance, number of pupils to a teacher, etc. We find no dissent from this opinion where we have been able to consult.

“How shall the ‘average number belonging’ to the school be determined? To obtain the ‘whole number of names enrolled’ is easy; so of the ‘average attendance;’ but with this quite otherwise.

* * * * *

School Records.

"We would suggest the following modes of determining who are members, as either of them would be better than the present want of method :

"1st. That, without the present attempt at uniformity, the school report should always contain an intelligible account of the method by which the 'average number belonging' is obtained. The consideration of these different methods will have a tendency, year by year, to produce uniformity. Or,

"2d. That the account of membership, for this purpose, be entirely disconnected from the exclusions from school which are of a penal kind ; and that, whatever the cause of the absence may be, deacease alone being excepted, the pupil be considered a member for a certain number of days, say four, after he has ceased to attend that on the fifth day the name be dropped."

The following extract is taken from the report of a committee of the Massachusetts State Teachers Association, prepared by John D. Philbrick, Esq., Superintendent of Schools, Boston :

"To ascertain the average whole number *belonging* with uniformity and exactness, is the most difficult matter connected with educational statistics. The percentage of attendance based on this, and ascertained by dividing the average daily attendance by the average whole number belonging, is what has been aptly denominated, by the late president of this association, in an article on the subject, in the March number of the *Massachusetts Teacher*, the true merit of attendance. Now this percentage may be increased in two ways ; first, by making the dividend as large as possible, that is, the daily attendance ; and so far as teachers and scholars are concerned, all the merit lies here. As a general rule, the attendance of a pupil should not be counted, unless he is present during the session, or long enough to substantially accomplish the work of the session."

In 1860, Ira Divoll, Esq., Superintendent of St. Louis Public Schools, issued a circular on this subject to superintendents and school commissioners, from which the following extracts are taken :

School Records.

“*Registration of Pupils and Attendance.*—This portion of statistical matter should embrace—

“1. The whole number of pupils enrolled, of each sex (exclusive of duplicate registrations caused by transferring).

“2. The average number *belonging*, for the year.

“3. The average number in daily attendance, for the year.

“The character of the attendance of pupils determines the degree of usefulness of schools. Records of tardiness and punctuality are also important.

“The ages of the pupils enrolled are important in determining the standing and grades of different schools. It is also desirable to know the *minimum* and *maximum* ages at which pupils are admitted to school in different cities.

“Statistics showing the number of children represented by parents in particular occupations, are valuable, in determining, as nearly as possible, to what degree the different classes of society avail themselves of the advantages of public schools.

“The nativity of children is important enough to be noted in school reports. The degree of homogeneity among the scholars has its influence on the standing of the school.

“The number of pupils in different studies also determines the grade and standing of the schools.

“Whenever evening schools are a part of the public-school system, they should be as carefully and reliably reported as the day schools.

“A clear distinction should be made in items of cost, between those for the schools proper, and for other purposes.

“If any thing useful is to come from comparing the school statistics of one city with those of another, they must not only be correct, but they must be uniform. Suppose the average number of pupils *belonging* (as this is the number for which accommodations and instruction must be provided), be taken as the basis for estimating cost, the question at once arises, ‘How shall this *average number belonging to school* be determined?’ After a child has been registered as a member of the school, when, and for what causes, shall his connection be severed; and how long shall he be considered a member while he is absent? Shall his name be stricken from the roll immediately, or shall it remain for a day, a week, a month, or a quarter? Shall the reasons of his absence be considered in deter-

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mining this matter? He may be absent on account of truancy, sickness of himself, sickness in the family, doing errands, visiting, working, and a variety of excuses.

"The rules on this subject, in St. Louis, are as follows:

"1. A pupil may be suspended (not expelled) for a variety of causes, and while under suspension his name is stricken from the roll.

"2. If a pupil has deceased, or has positively left the city without the intention of returning, his name is stricken from the roll immediately.

"3. If his continued absence is caused by his own sickness, his name is retained on the roll for one week, and no longer.

"4. For all other causes of absence, and when no cause is known to the teacher, the name is dropped from the record after two days, if the pupil do not return.

"These regulations are strictly observed in our schools; the number *belonging*, the number *present*, and the *per cent.* of attendance, are recorded every half-day in every department."

USE OF SCHOOL RECORDS.

A judicious use of the Class-Book, in which a record is made of the pupil's standing and progress from day to day, is one of the most important instrumentalities that teachers can bring to their aid in securing punctual attendance and an elevated standard of scholarship and deportment. The consciousness that these elements of character and scholarship are permanently recorded, is an abiding and potent influence with every pupil who has not lost all self-respect and all regard for the good opinion of his friends.

No other agency has yet been devised, which is half so effective as this in preventing the necessity for resorting to corporal punishment in school. If a

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teacher *created* the necessity for corporal punishment, even in a single instance, he would be regarded as unworthy to retain his office. If he can, by a proper use of school records, *lessen* the necessity for punishment, and neglects to avail himself of this means, how much less culpable is he to be regarded?

In the grammar divisions, the results of these records should, if practicable, be sent to the parent of the pupils at the close of every month. The salutary influence of these frequent *reckonings* with pupils, in the presence of their parents, cannot be over-estimated.

In the primary divisions, also, these records should be made to bear directly and constantly upon the character and progress of the pupils. Frequent and pointed allusions should be made to them, for the purpose of stimulating exertion and checking irregularity. When several marks of misdemeanor have accumulated against the name of a pupil, he may be called to the desk, or detained after school, and warned of the consequences. When pupils pass an entire week, or other prescribed period, without a demerit mark, they may receive a mark of special credit. At the close of every day or week, the names of all the children that have not been marked for misconduct, may be read before the school; and at the close of every month, the names of those that have secured the highest rank in deportment may be printed on the blackboard. By these and other similar means, a gentle pressure of influence may

[Upper half of foolscap sheet; to be extended down the whole length of the sheet.]

Daily Record of Attendance, Scholarship, and

[illegible]

School Records.

be brought to bear at all times upon the children, which will serve as a substitute for more than half of all the corporal punishment that is now inflicted by teachers who have not learned the use of school records.

Similar remarks might also be made respecting the records of attendance and scholarship, and similar lessons drawn from them, respecting the importance of obtaining the best results by the best means.*

In compiling and arranging the forms herewith presented, the two great objects sought were simplicity and completeness. The writer examined and compared a large number of the blanks used in different cities, and endeavored to copy their best features. A trial of over four years in the schools of Chicago, has proved the efficiency of these forms in accomplishing the object for which they were prepared.

The form marked **A** is the upper portion of a single folio of the *Class-Book*, arranged for a month of five weeks. When the month contains only four weeks, the last week of the form will be left blank.

* "As a general rule, the teacher, as well as the merchant or man of business, who keeps his accounts in a loose, irregular manner, and seldom posts his books, is the one most likely to meet with failure, without knowing the cause."—*Rochester Report*.

"Those teachers who so employ a well-adjusted method as to reach the highest results, deem the practice of keeping records not only a most valuable agency in the whole management of a school, but quite indispensable, for which no equivalent can be found as a substitute."—*Ariel Parish, Member of Mass. Board of Education*.

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The following *directions* and *explanations* will be a sufficient guide to the use of the *Class-Book*.

A small *a* denotes absence, *t* tardiness, and *d* dismissal; to be placed at the lower left hand corner of the square for A. M., and at the lower right hand for P. M. A blank space at the upper left-hand corner denotes good scholarship; at the upper right-hand corner, good deportment. Marks at the upper left hand denote bad lessons; at the upper right hand, bad conduct. Entries of special credit may be made by turning a pencil on its point, so as to leave a dot in the same corner that is devoted to the marks of error or demerit.

The highest degree of excellence in the *Average* columns is denoted by 100. The column headed *General Average* combines the three averages of *Attendance*, *Scholarship*, and *Deportment*. The pupil having the highest rank in the *General Average*, is marked 1 in the column headed *Relative Standing*; the next highest, 2; and so on through the class.

The daily record of scholarship and deportment should be made with such fullness and care that the averages at the close of the month, may, in the main, be based upon it. In the lower classes of the primary divisions, these daily marks will necessarily be less full and exact than in the more advanced classes, and the teachers will be obliged to rely more upon general impressions, and less upon the daily record; but even in the lowest classes, some account should be kept of the daily lessons and deportment of the pupils.

At the close of the school month, the results should be carried out in the columns of the Monthly Report, and the name of the teacher affixed. The *averages* should all be carried out in *whole numbers*. When there is a fraction of one half or more, add one to the whole number. All fractions less than one half should be dropped.


The numbers under *Punctual*, *Late*, *Absent*, and *Dismissed* represent *half-days*. These columns should all be footed up at the close of the month.


Each half-day's absence, unless for sickness, may deduct two from 100 in the *Attendance Average*, and each tardiness or dismissal may deduct one. Absences and dismissals occasioned by sickness, are carried out in their respective columns, but do not affect the *Attendance Average*.

B

Monthly Report of.....
in the..... Grade, for the Term commencing

MONTH ENDING.	Attendance.				Attendance Average.	Scholarship Average.
	Punctual.	Late.	Dismissed.	Absent.		

 The highest degree of excellence in the AVERAGE columns is denoted by 100, representing half-days. The column marked GENERAL AVERAGE combines the three standing of the Pupil. When the School Month consists of four weeks, each tardiness deducts 1; each absence deducts 2; but absences and dismissals occasioned by illness deduct four halves, or twice as great, etc. The standard adopted is such that ranks from 90 to 100, HIGHEST; from 80 to 90, MEDIATE; from 70 to 80, LOW; and under 70, LOWEST. The rank in DEPARTMENT AVERAGE showing whether the standing of the Pupil is above or below the GENERAL AVERAGE.

 The Parent or Guardian is respectfully requested to examine and sign this report. It will be more than a mere formality, and that parents will co-operate with the teacher in the time that Pupils are tasked beyond their strength, or that they are not provided for. Directly with the teacher on the subject.

School.

a Member of the Class

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Department Average.	General Average.	General Average of the Class.	Signature of Parent or Guardian.

the number 100. The numbers under PUNCTUAL, LATE, DISMISSED, and ABSENT
verages of ATTENDANCE, SCHOLARSHIP, and DEPARTMENT; and shows the general
ess or dismissal before the close of School deducts 1 from 100 in the ATTENDANCE
kness do not affect either the ATTENDANCE AVERAGE or GENERAL AVERAGE. When
nesses, or dismissals, are four-fifths as great; when it contains only two weeks,
5 to 100 may be designated as HIGHEST; from 90 to 95, HIGH; from 80 to 90,
should in every case be 100. The last column is introduced for the purpose of
f the whole class.

report each month, and return it by the bearer. It is hoped that this examination
ers in their efforts to improve the character of the schools. If it is found at any
ith sufficient employment, the parents are particularly requested to confer imme-

Teacher.

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The Scholarship and Deportment Averages may be found by deducting the number of marks for bad lessons and bad conduct from 100, provided the pupil has been present through the month; but if the pupil has been absent any part of the month, the number should be proportionally larger. If teachers give their pupils marks of special credit, these may, at the discretion of the teacher, be applied to cancel a limited number of errors or marks of demerit. Thus, one or two special credit marks may cancel one error or mark of demerit; two or four credit marks may cancel two errors or marks of demerit, etc. But rules for removing marks of error or demerit should be applied with great caution. Pupils should never be suffered to feel that it is an easy matter to secure the removal of errors or marks of demerit which have once been placed against their names.

When the month contains five weeks, the *Averages* may be found by deducting four-fifths of the marks from 100. When the month contains only two weeks, the *Averages* may be found by deducting four halves of the number of marks, or twice the number; and for three weeks, four-thirds of the number may be deducted. The same principle applies to the *Attendance Average*.

It may in some cases be proper to deduct more or less than the exact number of marks for bad lessons or bad conduct. Whatever rule is adopted, the results arrived at in the *General Average* should be such that ranks from 95 to 100 may be designated as *highest*; from 90 to 95, *high*; from 80 to 90, *mediate*; from 70 to 80, *low*; and under 70, *lowest*.

In noting the *Relative Standing* of different members in a class, it will often be found that several pupils have the same *General Average*. In such cases they should be marked alike. Thus, if two pupils have each a rank of 98, and that is the highest rank attained by any one in the class, they should both be marked 1 in the column of *Relative Standing*, and so of any lower rank.

The *Monthly Report to Parents* is copied directly from the right-hand column of the Class-Book. See accompanying form marked **B**.

SELF-RELIANCE.

THE two great objects of intellectual education, are mental discipline and the acquisition of knowledge. The highest and most important of these objects is mental discipline, or the power of using the mind to the best advantage. The price of this discipline is effort. No man ever yet made intellectual progress without intellectual labor. It is this alone that can strengthen and invigorate the noble faculties with which we are endowed.

However much we may regret that we do not live a century later, because we can not have the benefit of the improvements that are to be made during the next hundred years, of one thing we may rest assured, that intellectual eminence will be attained during the 20th century just as it is in the 19th—by the *labor of the brain*. We are not to look for any new discovery or invention that shall supersede the necessity of mental toil; we are not to desire it. If we had but to supplicate some kind genius, and he would at once endow us with all the knowledge in the universe, the gift would prove a curse to us, and not a blessing. We must have the discipline of *acquiring* knowledge, and in the manner established by the Author of our being. Without this discipline our intellectual stores would be worse than useless.

The general law of intellectual growth is manifestly this;—whatever may be the mental power

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which we at any time possess, it requires a repetition of mental efforts, equal in degree to those which we have put forth before, to prevent actual deterioration. Every considerable step of advance from this point must be by a new and still higher intellectual performance.

There are many impediments in the path of the student, which it is desirable to remove; but he who attempts to remove all difficulties, or as many of them as possible, wars against the highest law of intellectual development. There can not be a more fatal mistake in education, than that of a teacher who adopts the sentiment, that his duty requires him to render the daily tasks of his pupils as easy as possible.

There is, perhaps, no error in our schools at the present time more deeply seated or more widely extended than the ruinous practice of aiding pupils in doing work which it is all-important they should do for themselves. Our progress in the art of cultivating habits of earnest, independent thought, has not kept pace with our improvements in other departments of education. Familiar explanations, and illustrations, and simplifications, and dilutions, too often spare the pupil the labor of thinking for himself, and thus dwarf the intellect, and defeat the highest object for which our schools are established.

To secure from a pupil the solution of a difficult problem will often cost time which the teacher can ill afford; it may often cost more effort to secure a solution from the pupil, than it costs the pupil to do the work. The pupil has tried the problem, and

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satisfied himself that he is not able to solve it; the teacher may be satisfied that the pupil can perform it, but if he can not make the pupil think so too, it will be difficult to bring his best energies to bear upon it; and even after the pupil is persuaded that he is able to accomplish the task, it may still be necessary for the teacher to adopt special measures to set the pupil's mind at work. The pupil may have the ability to solve the problem; he may believe that he has this ability; and he may have a willing mind; and, after all, fail entirely of doing it. And this brings to view what must be regarded as the highest gift of the teacher: namely, the ability to teach his pupils how to think and act, without doing their thinking and acting for them.

When a pupil has failed to overcome an obstacle, his mind may often be quickened to action by requesting him to explain the steps he has taken. "Great thoughts," says Dr. Channing, "are never fully possessed till he who has conceived them has given them fit utterance." So with a pupil attempting to surmount a difficulty; the very effort required to express a thought in language often aids materially in grasping the thought itself.

A scholar had become discouraged over a difficult question. He had gone through the solution again and again, but could not obtain the answer sought. The teacher availed himself of a favorable opportunity, and requested the pupil to go through the work slowly and carefully in his presence. As the pupil proceeded the teacher required him to explain each

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step of the process; and when he reached the point where his previous error occurred, as the teacher asked him to give his reason, the pupil's eye flashed with delight and he exclaimed, "I see my mistake!" Without further assistance he soon reached a correct result. The teacher had not furnished the slightest hint in respect to the solution of the problem. He had only taken measures which brought the pupil's own strength to bear upon it.

There are, however, peculiar cases which no such method will reach. The pupil may be required to repeat his solution a hundred times, in the presence of the teacher or alone, with reasons or without, and all to no purpose. The result, if he reaches one, is sure to be wrong. It is not time, even now, for the teacher to give over in despair. Let him ask the pupil such questions as will call to mind the principles which he has occasion to apply, and, in a majority of cases, the pupil will need no further aid.

The same end may usually be gained by giving the pupil an example involving the difficulty over which he has stumbled, but less complicated in other respects; or by giving him several examples, leading gradually to the main obstacle to be overcome. I believe the cases are exceedingly rare in which minds properly disciplined would ever be benefited by direct assistance, in an ordinary course of mathematical study. But if it be thought best, in extreme cases, to afford this assistance, let the pupil, by all means, be required to *repeat the process*, after the teacher's work has been entirely

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erased ; and thus derive, at least, the benefit of *re-producing*, though he has not the power to *originate*.

The teacher will find it a highly useful exercise to give his pupils an occasional *model of thinking*. Let him take a problem to the blackboard, and *think aloud* as he proceeds with the solution ; so that the pupils may witness the action of the teacher's mind, and observe the questions he asks himself, and the various associations and comparisons that arise, as he advances from step to step in the process.

I am aware that in many schools the teachers can not dwell upon particular points with the same degree of thoroughness that I have recommended ; but this does not affect the importance of the principle, which should be applied whenever the circumstances permit.

In most of our schools pupils indulge, to a greater or less extent, in the practice of assisting one another in the solution of difficult questions. I need not say that we should labor most assiduously to eradicate this injurious practice. Pupils should be taught to regard it as dishonorable, either to assist others or to receive assistance, except under the special cognizance and direction of the teacher.

Permit me, in this connection, to allude to one of the *helps* kindly furnished by a large class of publishers and authors, for the special benefit of teachers ; but which many pupils have thought to be quite as well suited to their wants as to the wants of instructors. I refer to printed *keys*, containing solutions of all the more difficult problems in arithmetic and other branches of mathematics.

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There are undoubtedly cases in which the *time* of the teacher is so limited that it is necessary for him to resort to the use of a key; but with pupils their effect is always injurious, sapping the very foundation of every thing adapted to promote manly, independent thought. Even with teachers who are compelled to resort to the use of keys for the purpose of saving time, it must be confessed that the *tendency* of the practice is to render instruction superficial. The very best that can be said of them is that they are *necessary evils*.*

The practice of introducing young children to the study of English grammar as a science, and assigning them daily lessons to be prepared from a text-book, is exceedingly injurious in its influence upon their mental habits. A thorough and intelligent analysis of the structure of language is beyond the capacity of children eight or nine years of age.

Instruction in the use of language should be commenced as soon as children enter school, and all the primary classes should have frequent oral and written exercises in cultivating this important art; but the practice of requiring pupils under ten years of age to prepare set lessons from a grammatical text-book, often accomplishes little more than to form and strengthen the habit of studying without thinking.

* I refer, in these remarks, to keys that contain the solution of difficult questions, and not to those which contain only the *answers* of the problems. No such evils could arise from the use of keys containing answers only.

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Few of us have any just conception of the latent energies of our own minds. It was eloquently said by Prof. B. B. Edwards, that "Genius lies buried on our mountains and in our valleys;" and he might with equal truth have added, that genius lies buried in our schools and colleges.

A successful teacher, of many years' experience, was accustomed to say to his pupils that he did not believe their average intellectual progress was ever half so great as they were capable of making. But it would be absurd to suppose that pupils do not generally devote half so much *time* to study as their duty requires. Most of the pupils in our higher seminaries study too many hours in a day already. The loss is in the *manner* of studying. The mind is not perfectly abstracted from every thing except the subject in hand. The mental energies are not all aroused and concentrated on a single point.

A young man was employed, some years ago, as an assistant teacher in a flourishing New England academy. Among the classes which he was called to instruct was one composed mostly of older pupils, in Day's Algebra. He had been over the greater part of this text-book before, but there were two or three problems which he had never been able to solve. There was one in particular on which he had already tried his strength a number of times without success. His class was now rapidly approaching this portion of the book, and he must be prepared for any emergency. He accordingly set himself at work, and devoted several hours to the unsolved

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problem ; but still the desired result was as far from his grasp as ever.

Mortifying as the alternative was, he decided at length to go to one of the teachers of the school, and ask for assistance. The teacher kindly engaged to examine the question, but remarked that it was some time since he had been over this portion of the work, and he really was not quite sure that the method of solving it would readily occur to him. The class had now reached the section in which his difficulty occurred, and there was no time to be lost. After waiting one or two days the problem was returned to him, without a solution. What could be done? To go before his class and acknowledge that he was unable to master it, would be to lose caste at once. The necessity of the case suggested one more expedient. He had a friend, in an adjoining city, who was quite distinguished as a teacher of mathematics. To the house of his friend he now directed his course with as little delay as possible, but on arriving he learned that his friend had left the city and would not return for several days.

His last hope had fled, and his heart sunk within him. With a burden of chagrin and mortification that was almost insupportable, he commenced retracing his steps. "What," thought he to himself, "am I doing? Why am I here?" And his steps gradually quickened, as the excitement of his mind increased. He walked a few moments in silence ; but his emotions soon found audible utterance. "I *can* solve the problem," he said, with emphatic ges-

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ture, "and I *will* solve it!" He went to his room, seated himself at his table, and did not rise till the task was accomplished.

This single triumph was worth more to him than a year of ordinary tuition, and the pleasure it afforded seemed to him like the concentration of a life of bliss. The solution was written out in full, and at the end of it there still stands a memorandum of the date and the hour of the night when the desired answer was obtained.

If we examine the intellectual efforts of our pupils we shall probably find that nine-tenths of them fall below the maximum of their own previous efforts, and can not therefore be taken into the account in estimating their intellectual progress.

Two pupils of equal abilities have the same lesson to prepare for recitation. One accomplishes the task by putting forth twenty distinct mental efforts. Eighteen of these cost him no greater energy or activity of mind than he has often brought into exercise before. The other two relate to difficulties which can not be overcome without efforts one degree *higher* than any that he has previously made. But the appearance of new difficulties only stimulates his mind to action, and the task is accomplished.

The other pupil puts forth the eighteen efforts that come within the range of his previous attainments, and leaves the two difficulties which would cost a *new* effort, to be explained at the recitation. To a superficial observer, these two pupils may seem to

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progress in the ratio of 20 to 18; but the true philosopher will tell us that their progress, so far as intellectual growth is concerned, is in the ratio of 2 to 0.

It is our misfortune that we have no means of measuring and recording from day to day the successive steps of mental growth. Heat and cold, the lapse of time, the speed of lightning, are made tangible, and measured with ease and exactness. We can even form a tolerably correct estimate of the amount of knowledge acquired in a single day or hour; but our estimates of progress in intellectual strength are exceedingly uncertain and often fallacious. It is to be feared that we often give our pupils credit for having passed a very profitable day in school, when they have actually deteriorated in mental power. We are in danger of forgetting that they may add to their stores of *knowledge*, without increasing their intellectual *strength*.

Let me here suggest the importance of having lessons recited by *pupils*, and not by *teachers*. Many teachers fall into the habit of supplying all the *ellipses* made by their pupils during recitation. A pupil rises in his place with an air of assurance, and proceeds with a full voice till he meets with some trifling difficulty, when the teacher supplies the desired word or hint, and the pupil proceeds as before, till another difficulty arises, and the teacher again comes to his aid.

In this way a very fair recitation is made out; and neither teacher nor pupil appears to know that

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if the pupil had been left to stand independent and alone he would have made almost an entire failure.

The practice of asking questions that suggest, directly or indirectly, the desired answer, has been exposed and condemned again and again in educational conventions and educational journals, but it has not yet been banished from the school-room. Many teachers who are careful to avoid *leading questions*, still ask altogether too *many* questions. Instead of giving the pupil a general topic, and expecting him to exhaust it, they kindly throw in a number of *additional* questions, to draw out the particulars which the pupil ought to associate with the main thought, and present in full, without this aid. Younger pupils require more questions than those more advanced; but even younger pupils should be allowed to carry some portion of a recitation without assistance. See *ante*, p. 99, § 94.

Let me not be misunderstood in the views I have expressed respecting the importance of requiring pupils to rely upon their own resources. The first germs of knowledge must come from *without*, and not from *within*, and very much of the knowledge acquired by younger classes, must be imparted directly by teachers and others. There are many branches of learning which we must all derive, in a greater or less degree, from teachers and books. The treasures of knowledge that have been accumulating for nearly 6000 years, are not to be rejected nor lightly esteemed. They are a precious inheritance; but he who contents himself in idleness and

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ease, and neglects to put his inheritance to usury, will find that his riches are little better than shadows.

But there are other departments of study, in which the value of our acquisitions depends almost entirely upon the action of our own minds; and it is upon these branches that we depend in a great degree for intellectual growth. Here, then, I would apply most rigidly the rule—never do for a pupil what he is capable of doing for himself.

Passive instruction is always attended with danger to the mental habits of pupils. A happy faculty of explaining and illustrating the principles of a lesson is an exceedingly valuable gift, but it is a gift that is often exercised to the detriment of learners. Whatever instruction we attempt to impart orally, should be given in such a manner that it will not fail to find a lodgment in the mind of the pupil. It is not sufficient to illustrate principles by examples and then leave them. They may even be *understood* at the time, and yet not fully *possessed*. The learner must *go through the process himself*, to be sure he is master of it.

Five boys of a class had failed to solve a difficult example in their lesson. The teacher went to the blackboard, and explained very carefully the manner in which the work was to be performed. He then requested those that understood the explanation to manifest it, and the five hands were all promptly raised. “Well,” said the teacher, removing his work from the board, “you may all perform it now on your slates.” The effort was made, but

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the result showed that only two of the five were able to perform the task. The others were perhaps right in saying that they *understood* the work, as the teacher explained it, step by step, on the board; but it was quite another thing *to do it*.

In our efforts to cultivate habits of self-reliance on the part of our pupils, one of the best and most feasible measures to which we can resort, is the practice of introducing frequent written reviews.

Several topics are written distinctly on the black-board, and the pupils are required to expand them as fully and accurately as possible. Each pupil is seated by himself, and furnished with pen and paper; but receives no assistance, direct or indirect, from either teacher or text-book. See *ante*, p. 31, § 9.

There are too many teachers who seem to regard it as their chief business to exercise and develop their *own* minds, instead of attending to the minds of their pupils. There are those who even manage to sustain a very good degree of popularity, in school and in the community, by a display of themselves. "What stores of knowledge he possesses," says one. "How beautiful his illustrations," says another. This display of the teacher's knowledge may serve for *exhibition*, but it will prove of little value to the pupils in after life. The scholar whose attainments at school are but the echo of what the teacher has learned, will be sure to become one of that large class of citizens whose opinions and actions are always governed by those who have the independence to think and act for themselves.

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I have dwelt at considerable length upon the subject of this article, because I believe that very few pupils are taught to rely sufficiently upon their own resources, and because I believe that many of the modern appliances in schools militate directly against the accomplishment of this object.

A few brief quotations will close the article.

"One preliminary truth is to be kept steadily in view in all the processes of teaching, and in the preparation of all its instruments, viz., that though much may be done by others to aid, yet the effective labor must be performed by the learner himself."—*Horace Mann*.

"Alas! how many examples are now present to our memory, of young men the most anxiously and expensively be-schoolmastered, be-tutored, be-lectured, any thing but *educated*; who have received arms and ammunition, instead of skill, strength, and courage; varnished rather than polished; perilously over-civilized, and most pitifully uncultivated! And all from inattention to the method dictated by nature herself, to the simple truth, that as the forms in all organized existence, so must all true and living knowledge proceed from within; that it may be trained, supported, fed, excited, but can never be infused or impressed."—*Coleridge*.

"A man can no more learn by the sweat of another man's brains than he can take exercise by getting another man to walk for him. All mental improvement resolves itself ultimately into self-improvement."—*Dr. Booth, of Wandsworth, England*.

"The prevailing notion, that we must be taught every thing, is a great evil. The most extensive education given by the most skillful masters often produces but inferior characters; that alone which we give to ourselves elevates us above mediocrity. The eminence attained by great men is always the result of their own industry."—*Marcel*.

"The first error in education is teaching men to *imitate*, or *repeat*, rather than to *think*. We need to take but a very cursory glance at the great theater of human life, to know how deep a root this radical error has struck into the foundations of education."—*Mansfield's American Education*.

PRIMARY SCHOOLS.

PRIMARY SCHOOLS are the basis of our whole system of public instruction. If evils are suffered to exist here, they will manifest themselves in all the higher stages of the pupil's progress, and cling to him through life.*

"Scratch the green rind of a sapling, or wantonly twist it in the soil ;
The scarred and crooked oak will tell of thee for centuries to come."

It is in the Primary Schools that more than half of all public instruction is imparted, and a large portion of the children gathered here do not remain in school long enough to pass into the higher departments at all.

In most cities and towns, the Primary Schools suffer in a greater or less degree from the general impression that the teachers occupy positions less honorable than those of the teachers in the higher divisions, and perhaps still more from the pecuniary distinction that is often made in favor of teachers in the higher grades.

* "As parts of a great system of public instruction, it is scarcely possible to attach too much importance to the Primary Schools. They are the base of the pyramid, and in proportion as the base is enlarged and its foundations strengthened, the superstructure can be reared with ease and rapidity in graceful proportions, and to a towering height."—*Report of Boston School Committee.*

Primary Teachers.

It is no disparagement to the teachers to say, that Primary classes are not generally taught so well as classes more advanced.* This would probably still be true if the Primary classes were taught by the teachers of the upper grades.

Of all the applicants examined by School Directors and Superintendents, there are more who are found qualified to instruct in the Grammar Schools than there are who are qualified to instruct in the Primary Schools.†

To excel as a Primary teacher, requires peculiar natural gifts, a thorough acquaintance with the first principles of knowledge, special fondness for young children, and an abiding consciousness that there is really no higher department of useful labor than that of giving direction to the first efforts of minds that are opening to an endless existence.‡

* "The weakest point in the whole system of American education, is its deficiency in thoroughness in all the elementary courses."
—*Dr. Sears.*

† "In my search for teachers to fill vacancies, I find ten qualified to teach Geometry in a High School, to one who is qualified to teach reading in a Primary School; and in general, it is more difficult to find teachers adapted to give instruction in the lower grades, than in the higher."—*A. Freeze, Superintendent of Schools, Cleveland.*

‡ "The best teachers are needed for Primary Schools. At no point in the whole course of study are the results of incompetent teaching so disastrous, as at the commencement. If utter inexperience or desperate mediocrity must sit at the teacher's desk, let it be anywhere, everywhere, save in the Primary School: for anywhere and everywhere else will its ability to do irreparable mischief be less. At the subsequent stages of education, the mind emerging from the state of implicit trust in the mere dicta of the master, begins to

Personal Influence of Teachers.

There is no other grade of schools in which the personal character of the teacher is so directly felt, as in the Primary. In the Grammar School, lessons are learned from text-books, and very much of the

assert itself, to sift what it receives, and find corrections when they are needed—but at the beginning, the mind takes the impress of the instruction given, with unquestioning faith, exact as the print of the seal upon the wax. The position is confidently assumed, that the wise discipline and sound philosophic mental training of the children in our Primary Schools, is more important and more difficult than that of any other department; and hence that the very best teachers should be assigned to that post of duty. It requires the clearest insight into the laws of mental life and action and the springs of feeling, the broadest views of the philosophy of education considered both as a science and an art, and the rarest combination of personal qualities, intellectual, moral, and social, that can well be conceived. When such teachers are found, they should be secured at almost any price. The common notion, that it matters little who teaches the little ones, or who is the assistant, provided an able man is obtained for the advanced scholars, or for principal, is exceedingly pernicious. With the exception, perhaps, of the principal of a union or graded school, the teachers of the Primary Departments should be the best qualified and the best paid.”—*Newton Bateman, State Superintendent of Public Instruction, Illinois.*

“Especially should those to whom the education of the Primary classes is committed, be not only competent and apt to teach, but equable, dignified, and gentle in their deportment, kind and affectionate in their disposition, accustomed to self-control, and familiar with the wants and peculiarities of the children intrusted to their care. As a general rule, much greater maturity of mind is necessary and desirable for the proper development and discipline of this class of pupils, than for those of a more advanced grade; while, in the selection and arrangement of teachers, the youngest and least experienced are most frequently assigned to the duties of the former. While greater age, of itself, affords no criterion of ability to succeed in this department of instruction, the judgment, the dispo-

Primary Teachers.

pupil's progress is made without the direct assistance of the teacher. But in the Primary Schools, the teacher is herself the text-book, the living oracle; and nearly all the impressions received by the pupil are a direct reflection from her own mind and heart.

But a teacher may possess every desirable mental and moral endowment, and yet, if a position in a Primary School is regarded as secondary in importance, and a situation in a higher department is continually before the mind as an object of ambition and desire, it is vain to expect the same degree of success that would be realized if no such distinction existed.

Since the duties of Primary teachers are really more arduous and responsible than those of teachers in the higher grades, and since most teachers would prefer situations in the higher grades, even if the compensation was the same as that of the Primary teachers, it would be difficult to find a reason, except in the power of custom, for paying the lowest salary to teachers of the Primary classes. In St. Louis, Chicago, and several other cities, the salaries are alike in the Grammar and Primary grades. By applying the same scale of salaries to both departments, the two positions are made equally honorable, and School Directors are enabled to secure for

sition, the temper, and the demeanor of the teacher should be narrowly scrutinized before committing to her guidance the intellectual and moral instruction of the elementary classes in our public schools."—*S. S. Randall, Superintendent of Schools, New York.*

Special Training of Teachers.

the pupils of each grade the teachers best qualified to instruct them.*

It is to be regretted that so few Primary teachers receive any *special training* before entering upon the peculiar duties of their office. They are generally well educated, but their education has been conducted without any particular reference to the positions they are called to occupy. It is seldom that an examination of teachers occurs in which a majority of the applicants are not found to be radically deficient in some of the elementary principles of Primary instruction. Examples are constantly presented in which a candidate who is requested to give the sounds of the letters as they occur in some common word, replies, with the utmost composure,

* "Those active sympathies, winning ways, intuitive perceptions, womanly grace and delicacy, which captivate the hearts of all children, united with a well-balanced, well-cultivated mind, and a sincere desire to make children happy, are indispensable to the success of the Primary teacher. To secure these advantages, teachers must be selected with special reference to the labor to be done; and instead of testing the fitness of teachers for higher grades in the Primary Schools, it is respectfully submitted that it would be wisest to begin and work in the other direction. And let the scale of wages be also inverted, to correspond with the inverted order of rank. Let the best wages be paid to the most successful Primary teacher. Tradition and reverence for usage hang heavily upon all school management and all modes of instruction, but nowhere are these more conspicuous or more oppressive, than in the common opinion that *anybody* is competent to teach the little child."—*M. F. Cowdery, Superintendent of Schools, Sandusky, Ohio.*

"It requires a nicer tact, more instinctive talent, to manage successfully a Primary School, than one of a higher grade."—*Rhode Island State Commissioner's Report.*

Primary Schools Improving.

that she has never attended to the sounds of the letters. Many applicants seem wholly unconscious that there is any necessary connection between their familiarity with the *rudiments* of learning and their fitness to teach a Primary School.

But while the Primary Schools are still suffering greatly from the evils which I have here pointed out, it is gratifying to know that the number of well-qualified Primary teachers is constantly increasing. The attention of educators has been specially turned to this subject, and a large number of model Primary teachers are now found in every section of the country; and among those that entered upon their labors as teachers with inadequate preparation, there are many who have made the most earnest efforts to improve their qualifications for the positions which they occupy. In no department of educational labor has improvement been more manifest during the last ten years, than in the instruction and discipline of Primary Schools.

DISCIPLINE.

THE system of discipline adopted in schools should ever be guarded with special care. The constant aim of the teacher should be not merely to secure the best discipline, but to secure it by the best means.

That good order and a ready compliance with the directions and wishes of the teacher are essential to the success of every school, is a point on which all are agreed; but different teachers adopt widely different measures to attain this end. One labors chiefly to secure the confidence and kind regard of his pupils, and to satisfy them that all his requirements are dictated by a sincere and ardent desire to advance their best interests. Another appeals mainly to the necessity and justice of connecting suffering with wrong-doing, and follows every offence with some form of punishment. He may even succeed in satisfying both his pupils and their parents that the steps he is taking are necessary to the order and improvement of his school.

One commences his efforts before the tendencies to misconduct have ripened into action, and avoids the necessity for punishment except in extraordinary cases; while the other delays till his rules are violated, and is then compelled either to punish the offender,

School Discipline.

or abandon his rules, and with them all hope of subordination and improvement.

If, now, we reason from cases like these, that a necessity for punishment implies incapacity on the part of the teacher to govern, we shall do great injustice to many of the most worthy and successful teachers in our schools. Cases will sometimes arise in which the best teacher would find it necessary to resort to the infliction of punishment for the misconduct of his pupils. Instances not unfrequently occur in which no other course will bring a wayward scholar to reflect long enough to afford an opportunity for higher and better influences to gain a lodgment in his mind.

If, then, on the one hand, we rest satisfied that a teacher has done his whole duty when we find that his punishments, though frequent and severe, are not disproportionate to the offences committed, we are in danger of giving sanction to punishments which, under the management of a more skillful teacher, would have been wholly unnecessary. And, on the other hand, if every punishment inflicted by a teacher is to be a means of rendering his name odious; if he is not to be sustained by the sympathy and approval of school directors and parents, the right arm of his authority is paralyzed. This very lack of sustaining influence will be the means of increasing greatly the necessity for punishment, which might be avoided if the right to inflict it was never called in question.

The ability to manage a school with the least pos-

Corporal Punishment.

sible amount of punishment, is an attainment of the highest order; and the teachers who possess this power should everywhere receive the highest honors of the profession and the most liberal rewards.

The main question at issue respecting corporal punishment, is not whether it can be entirely dispensed with, but how far can the necessity for resorting to it be reduced, without detriment to the order and discipline of schools.

In the efforts of the teacher to remove, as far as possible, the necessity for school punishments, he will have occasion to exercise all the judgment and skill he possesses, in employing other means to control the tendency of wayward pupils to irregularity and insubordination.* The first, and most important of these, must be found in the personal influence of the teacher himself. He must have the ability to inspire his pupils with a love of virtue and every adorning excellence, and his own life must be a model worthy of their imitation.

* "The following appear to be the principal means of which the educator can avail himself for maintaining an influence over his pupil :

1. The pupil's sense of duty.
2. The pupil's sense of his future interests.
3. The pupil's desire for knowledge.
4. The pupil's desire for occupation and intellectual action.
5. The pupil's desire for praise.
6. The pupil's desire to surpass others.
7. The pupil's love of, and respect for, the teacher.
8. The example of the teacher.
9. The hope of a reward.
10. The fear of punishment." — *Reid's Principles of Education.*

Two Kinds of Obedience.

No effort should be spared to lead the pupils to govern themselves. This is a cardinal point in school discipline, and every thing short of this should be regarded as defective and unsatisfactory. Even arbitrary government by the teacher, when necessary, should tend to self-government on the part of the pupil, as an ultimate object.

There are two kinds of obedience, which are radically distinct from each other: obedience that is yielded in compliance with the dictates of reason and from a sense of duty; and obedience that is yielded to arbitrary authority, without any regard to reason and duty. The first requires no sacrifice of honor or self-respect on the part of the governed. It is simply recognizing the true and natural relation of the parent to his child, and of the teacher to his pupil. When the child's mind acts in accordance with reason, this obedience is yielded cheerfully and from choice. When the pupil will not acknowledge his duty to submit to the rightful authority of the teacher, when the will of the pupil gains control over his reason and judgment, then the teacher must take such measures as may be necessary to bring this wayward will to bow. The authority of the teacher in school must be complete and unquestioned.

But the teacher should never forget that love of freedom, love of independence, love of power, are all implanted in the natures of children for wise and important ends; and no unskillful teacher should be allowed to lay his hand ruthlessly upon

School Discipline.

them. No degree of eminence is ever attained without them. No high order of effort is ever made without them. They are committed to the teacher to be controlled and regulated, not to be crushed out.

The habit of yielding to arbitrary power against reason, is the condition of a slave; and mere servile obedience is degrading in its influence, destroys self-respect, breaks down all laudable ambition, and paralyzes every noble and worthy effort.

Of all the special instrumentalities that have been devised to aid teachers in securing the discipline of their schools, the most important is the use of the School Register, in which a permanent record is made of the pupil's deportment from day to day, and a general average carried out at the end of every month, to be sent, when practicable, to the parent or guardian. See *ante*, p. 139.

The subject of School Discipline is exceedingly fruitful, and I can not here attempt to discuss it in all its bearings. After introducing two or three quotations, I will pass to the consideration of a kindred topic.

"The value of any given result in school government depends very much upon the motives which produced it. We have seen pupils benumbed with fear and still as the grave, and heard their teacher—whose only *rule* was a reign of terror—lauded by the committee as a model disciplinarian. The stillest school is not always the most studious. Pupils may be controlled for a time by motives which will ultimately debase the character and enfeeble the will, or they may be stimulated to the highest effort by incentives which will be healthful and permanent in their influence upon the mind and heart."—*B. G. Northrop*.

Quotations.

"Another principle that is kept constantly in view in the government of the school, is to produce results by steadiness and perseverance, rather than by violent measures. Few students are found so obstinate or wayward as not to yield, eventually, even to a moderate pressure, steadily applied. This method of procedure is rendered the more easy and efficacious, by the consciousness of both the parties, that there is always in reserve ample power for more decisive measures, if they should become necessary. Students not previously accustomed to a mild method of discipline, sometimes mistake it at first for want of firmness. But such mistakes are soon rectified. The whole machinery of the school, like an extended piece of net-work, is thrown over and around him, and made to bear upon him, not with any great amount of force at any one time or place, but with a restraining influence just sufficient, and always and everywhere present. Some of the most hopeless cases of idleness and insubordination that I have ever known, have been found to yield to this species of treatment."—*Report of John S. Hart, Principal of Philadelphia High School.*

"Where all other means, both of prevention and of persuasion, reasoning and argument, have been faithfully and perseveringly tried, and have failed,—when the incorrigible offender is proof against all the gentler influences and agencies which the teacher has at his command, and continued forbearance involves a permanent injury, not only to the obstinate transgressor, but to his associates and companions, and to the welfare of the entire school,—the teacher should be clothed with the power of effectual chastisement. But this power should be exercised as sparingly as possible, and exercised, when it becomes inevitable, in such a manner as to produce the most salutary effect—*without passion, without anger or undue severity, and never in the presence of the school or the class.* Its infliction should, as far as possible, partake of the character of a *judicial punishment*,—resorted to with the utmost reluctance,—upon the fullest evidence of guilt, and of contumacy, *and only as a last resort.*"—*S. S. Randall, Superintendent of Schools, New York.*

LESSONS OF OBEDIENCE.

SOCIETY is so constituted, that the influence of government must everywhere be felt. A cheerful and hearty submission to rightful authority, is perfectly consistent with the freest and fullest development of a manly, independent spirit. It is impossible for any nation to maintain an existence, if the people have not learned this first great lesson of life; least of all can a free republic like ours continue, if the people have learned to govern, but not to obey. It becomes, then, an important inquiry, when and where shall this lesson of obedience be acquired. If delayed to adult years, there is no reason to expect it will ever be learned. It must be in the period of childhood and youth, and it must be either in the family or in the school. But it is painfully manifest, that a large portion of the children of every community, never learn to yield to authority at home, unless it be against their wills. In the public schools, all must be brought to the same standard. A spirit of implicit obedience must be secured, before any thing else can be attempted; not stolid, unreasoning, servile obedience, which crushes all manliness and self-respect out of the soul, but that intelligent, kindly obedience, which recognizes the true relation between parent and

Lessons of Obedience.

child, teacher and pupil, and bows cheerfully and from choice to the decision of another, whose character and position render it incumbent upon him to direct.

Here it is, in the public schools, that all the pupils learn a lesson which many of them would never learn elsewhere; a lesson which is essential to the perpetuity of our free government. This, if I mistake not, is the most important bond of connection between the free-school system and the State, and in this alone is found a sufficient argument for the support of schools at the expense of the State.*

* "Of all the dangers which threaten the future of our country, none, not even the fetid tide of official corruption, is so fearful as the gradual decrease in our habits of obedience. This is a result of the 'inalienable right of liberty' which we enjoy so fully; and is shown in the impaired force of parental influence, a greater disregard of the rights and comforts of others, and an increasing tendency to evade or defy the authority of law. Young America is now exuberant in its independence; but the greatest blessing it can have, is to be saved from itself, and to be taught that liberty rising above law, destroys its victim; untempered by humanity, is mere selfishness; and unregulated by law, becomes anarchy. This discipline is the work of education, and can only be accomplished by its broadest and most thorough operation."—*Report of Andrew H. Green, President of New York Board of Education, 1857.*

HEATING AND VENTILATION.

THE improvements that have been made during the last thirty years in the principles and modes of teaching, are without a parallel in the history of the world.

In school architecture very great progress has also been made, and most of the principal cities and villages now possess neat and commodious school-buildings. It must, however, be confessed, that in the art of heating and ventilating school-houses, we have not made the same degree of progress.

In attempting a few practical suggestions on the heating and ventilation of school-buildings, I will first introduce some of the more important principles relating to the subject.

TEMPERATURE.

We are so constituted that a certain degree of heat is essential to health and comfort. The proper temperature of a school-room, according to the testimony of a large number of the best physicians and educators, is about 68° Fahrenheit. When the thermometer in a room rises above 70°, measures should immediately be taken to reduce the temperature; and when it sinks below 65°, measures should be

Respiration.

taken to raise the temperature. If at any time the thermometer sinks below 60°, pupils can not be confined in their seats without an exposure of health.

RESPIRATION.

The healthy action of both mind and body requires a constant supply of fresh air for the lungs. A pure atmosphere is composed of about 80 per cent. of nitrogen, and 20 per cent. of oxygen. The life-giving principle is the oxygen. Air that has once passed through the lungs, is deprived of a large portion of its oxygen and charged with a poisonous gas. If it is retained in the lungs a few seconds, it will not even support ordinary combustion. Any one desirous of satisfying himself on this point, can do so by the following simple experiment. Provide a vessel containing a few quarts of water, a short tube of sufficient size for the breath to pass freely through it, a common drinking-glass, and a piece of candle about half an inch in length, attached to a few inches of wire, by which it may be suspended. Now plunge the glass into the water, and when the air is all expelled, invert and raise it gradually till most of the glass rises above the water; the open part being still below the surface, and the glass being still filled with the water. Next inhale a full breath of air and hold it in the lungs for fifteen or twenty seconds; then breathe it through the tube under the edge of the glass. It will of course displace the water, and the glass will be filled with air from the lungs. Before

Respiration.

taking the glass out of the water, plunge in a small plate or board, and close the opening of the glass. It may now be removed from the water and set on a table, and is ready for use. Having lighted the candle, remove the cover from the glass and drop the candle into the impure air, and the flame will be instantly extinguished.

Besides the impurities sent out from the lungs, the insensible perspiration from all the pupils in a room contributes very considerably to increase the pernicious quality of the atmosphere.

To those who value the health of their children, it needs no argument to prove that this devitalized, poisonous air should be constantly removed from the school-room, and pure, life-giving air be introduced in its stead.

In estimating the amount of fresh air to be supplied, we ought not merely to consider what the system can be made to tolerate, but what amount will sustain the highest state of health for the longest time. Dr. Reid recommends at least ten cubic feet per minute as a suitable average supply for each individual; and states that his estimate is the result of an "extreme variety of experiments, made on hundreds of different constitutions, supplied one by one with given amounts of air, and also in numerous assemblies and meetings, where there were means of estimating the quantity of air with which they were provided."*

* Reid on Ventilation.

Hot-air Furnaces.

No physiologist estimates the amount required by each individual at less than five cubic feet per minute; and yet not one school in a hundred receives even this supply. The consequence is, that most of the pupils in our schools are compelled to inhale a small amount of poison at every breath. But most constitutions can bear a gradual undermining by slow poison, without any sudden or alarming symptoms of disease, and so the process is allowed to go on.

It is a reproach to the age in which we live, that with so many opportunities for advancement, the heating and ventilation of most of the school-buildings in every section of the country are still so unsatisfactory.

Let us not, however, neglect to avail ourselves of the knowledge we possess, nor regard all efforts to introduce improvements as failures, because they are only partially successful.

HOT-AIR FURNACES.

Hot-air furnaces are natural ventilators. The heated air that is sent into the room by them, necessarily forces the same amount of impure air out of the room. But the heated air itself, with which the room is constantly supplied, is rendered more or less impure by contact with the overheated surface of the furnace.

Steam-heating—Hot-water Heating.

STEAM-HEATING.

Heating by steam is in many respects more satisfactory than by hot-air furnaces, but even this mode of heating has not yet been fully perfected.

In most of the school-buildings that are now heated by steam, the radiators are placed in the rooms to be warmed. When due care is exercised to furnish a liberal supply of radiating surface, a satisfactory amount of heat is usually secured, with a reasonable consumption of fuel; and in the coldest days of winter, when there is a great difference between the temperature of the outside and of the inside air, there is little difficulty in securing a moderate degree of action in the ventiducts. In milder weather the ventilation is necessarily very imperfect.

To insure the safety of the school, the boiler should, if practicable, be located outside of the main building.

HOT-WATER HEATING.

When air is heated by passing over pipes that contain hot water, or over other surfaces heated by water, it retains its purity and possesses all the substantial advantages of air heated by steam. This mode of heating has already been adopted in a large number of school-houses and other buildings, but it has not yet met with so general favor as steam-heating. The choice between steam and hot water is simply a question of convenience and expense. Neither of these modes of heating, as ordinarily applied, affords good ventilation.

Improved Methods of Heating by Steam and Hot Water.

IMPROVED METHODS OF HEATING BY STEAM AND HOT WATER.

The following improved method of heating by steam and hot water, is worthy of special consideration: The heating pipes are brought together in a chamber in the basement of the building. This chamber is supplied by conductors with cold air from the outside of the building, and the heated air passes by conductors from the hot-air chamber into the different rooms, in the same manner as from an ordinary hot-air furnace. The consumption of fuel is somewhat greater than in the buildings heated by pipes which are placed in the rooms to be warmed; but this increased expenditure is mainly owing to the fact that rooms heated by pipes around the walls are of necessity poorly ventilated. The saving is made by heating the air once, and then breathing it over and over; whereas, by the improved arrangement, the air is heated, used once, and then removed by introducing a fresh supply.

This may safely be pronounced one of the best methods of heating school-buildings yet devised, since it secures the requisite degree of heat, furnishes a constant supply of fresh, warm air, and insures a good action of the ventiducts.

Another mode of heating by steam or hot water, combines the two modes already described. A portion of the pipes are placed around the rooms to be warmed, and a portion in the hot-air chamber under

Perkins Heater.

the building. The object of this arrangement is to bring as much of the radiating surface as possible into the rooms, and at the same time secure a satisfactory action of the ventiducts.

PERKINS HEATER.

The Perkins Heater has a pot for the fire and a hot-air chamber, similar to an ordinary hot-air furnace; but instead of sending the heated air of this chamber into the school-rooms, a large number of metallic tubes are made to pass through the chamber, communicating below with cold-air conductors from without, and above with hot-air conductors to the several rooms; the air being heated as it passes through these tubes, which extend from the bottom to the top of the hot-air chamber. To increase the action of the hot air upon these tubes, open pans of water are placed around the fire-pots, which are constantly sending off vapor or steam into the hot-air chamber. This arrangement furnishes a constant supply of pure air, raised to the proper degree of heat, and secures an efficient action of the ventiducts.

Other furnaces, similar in principle to the Perkins Heater, have also been employed successfully in the heating and ventilation of buildings.

Whatever form of apparatus may be employed, if the air is heated in chambers below, it is important that the rooms should be warmed by the introduction of a large volume of moderately heated air. When air is introduced into a room at a very high

Improved Stoves.

temperature, it rises at once to the top and will not readily mingle with the cold air below. In rooms heated by hot-air furnaces, it is not uncommon to find a difference of fifteen or twenty degrees between the temperature of the upper part of the room and that of the lower.

IMPROVED STOVES.

There are two serious objections to the use of common stoves in schools. The first is the inequality of temperature in different parts of the room. Children sitting near the stove are often obliged to endure a temperature of 75° or 80° , while those more remote are exposed to a temperature of only 55° or 60° . The other principal objection to common stoves, is their lack of ventilating power.

The air surrounding a stove rises as it becomes heated, and the cold air near the floor of the room is drawn toward the stove to supply the place of the air that rises. In this way, the feet of the children are obliged to remain in the coldest air of the room, and the evil is increased by the action of the stove, which is constantly giving this stratum of cold air a greater or less degree of motion.*

* "When a stove stands uninclosed in a room, and without any direct connection with the outer atmosphere, there is a constant current of air toward it from every side of the apartment, both to supply the draft of combustion within the fire-chamber, and to seek contact with the outer surface of the hot plates, and then pass upward in a heated, and consequently more rarefied condition. This current, which is not at all impeded by the ordinary movable screens, owing to their being open below and at the sides, enters

Improved Stoves.

To obviate these objections, stoves have been constructed with double cylinders, the space between the cylinders being open at the top and bottom. This secures a constant and rapid flow of air between the cylinders, which is heated in passing, rises to the top of the room, and then diffuses itself like the air that is introduced from a hot-air furnace.

It is obvious that this action will have the effect to distribute in different parts of the room the heat that would otherwise be radiated from the stove to the space immediately around it, and thus remove one of the most serious objections to the use of stoves.

The lower opening of the space between the cylinders may draw its supply of air directly from the room, or by a little extra expense it may be made to communicate with the air outside of the building.

If the air is carried to this lower opening by conductors from the outside, the stove becomes a *ventilating stove*. Pure, warm air is constantly introduced by it, and the vitiated air of the room is forced out through the ventiducts.

the apartment at the bottom of the doors and windows, and the chinks and openings in the floor and washboard, passes most strongly close along the floor, where the air is coldest and densest, and thus comes in direct contact with the feet and ankles of the occupants.' This effect is extremely unpleasant, at the same time that it is most injurious to health. Children, especially in the country, often enter school with damp feet, and exposure to this cold current of air, in a state of inaction for hours together, is the sure but unsuspected cause of many a severe cold and hard cough."—*Pennsylvania School Architecture*, by Thomas H. Burrowes, LL.D

Ventilation.

If the lower opening, under the stove, is fed by air from the room, the effect is to consume rapidly the cold air near the floor and equalize the temperature in all parts of the room. A constant circulation is secured, and the warm air from the upper portion of the room is necessarily drawn down near the floor, to take the place of the air that is carried up through the stove.

Since the improved stoves I have described can be procured at a moderate increase of expense above the cost of common stoves, and since they combine most of the substantial advantages of steam and hot-water apparatus, and of hot-air furnaces, their limited use can only be accounted for by the fact that their advantages are not generally known.

VENTILATION.

The construction and arrangement of ventiducts is a question of vital importance, in connection with the heating of school-rooms.

Since the essential element of all ventilation consists in the ingress and egress of air, the subject would seem at first view exceedingly simple; but in practice it has been found one of the most difficult of all the questions that have tasked the ingenuity of educators and philanthropists.

The first ventilator of which the author has any recollection, was made about twenty-five years ago, and used in connection with one of Orr's air-tight stoves. It opened directly into a smoke-flue, and was placed at the bottom of a room, the lower part

Ventilation.

being even with the floor. This secured a strong and certain action, and removed the air from the bottom of the room where it is coldest.

In many of our modern houses the ventilating registers are placed at the top of the rooms instead of the bottom. If a school-room is properly heated, that is, heated by the injection of a constant supply of fresh warm air, a ventilator placed at the top carries off the warmest and purest air of the room. The heated air conducted into the room rises directly to the top, and if it there finds a register opening into the ventiducts, it will of course pass directly off without being used at all. But if, on the other hand, the ventilating registers are placed either in the floor or in the bottom of the wall, the heated air sent into the room will first rise to the top, and then as the impure air near the floor is removed by the ventilators, the warm air above will pass down to take its place, and after being used and vitiated will pass off in the same way. The principal ventilators should not only be placed at the bottom of the room, but at the greatest distance from the inlet of the warm air.

A very excellent heating furnace, patented by Mr. Sawyer, is based on the principle of securing active ventilation from the lowest portion of the room. His ventilating registers are placed in the floor, and the impure air is conducted by tubes under the floor to the smoke-flues. This not only takes the coldest and most impure air from the room, but the ascending current in the smoke-flues necessarily secures a

Ventilation.

strong and constant action of the ventilators. It is worthy of observation that this arrangement is substantially a reproduction of the ventilators used twenty-five years ago in connection with Orr's air-tight stoves.

In constructing school-buildings, ventilating registers should generally be placed both at the top and the bottom of the rooms. In houses heated by common stoves, or by steam or hot-water pipes placed in the rooms, both the upper and the lower registers should ordinarily be kept open.

The foregoing remarks relate to the ventilation of school-rooms during the cold season. In the summer, when no artificial heat is required, the impure air from the lungs naturally ascends, and the upper registers should be constantly open.

It is not too much to say, that half the ventilators now found in our school-rooms are nearly useless. In rooms heated by steam with the pipes in the rooms, or by common stoves, it is very difficult to secure any but the most sluggish action, even when the ventiducts are properly constructed; and in most of the houses heated by the injection of warm air, the ventiducts are found to be either too small, or so badly obstructed as to be wholly inefficient. There are also hundreds of examples in which the ventiducts are made to terminate in close attics.

In a room intended for the accommodation of fifty or sixty pupils, the ventiduct should be not less than fifteen inches by eighteen, with a register having an equal amount of clear opening. In the construction

Ventilation.

of ventiducts, care should be taken to give them a smooth surface, and to avoid all sudden turns or angles. The Emerson ventilating caps, placed at the outlets, are also important auxiliaries to the successful operation of ventilating flues.

If a smoke-pipe, or steam or hot-water pipe, can be made to pass through a ventiduct, its value will be greatly increased. When this is impracticable, the ventiduct should at least be carried up by the side of a smoke-flue. In one of the school-buildings of Chicago, a steam-pipe is carried through the length of each ventiduct. In the Philadelphia High School, the ventiducts all terminate in two ventilating chambers in the loft. In each of these is placed a large coal-stove, and from the top is a large cylindrical exit-tube. A large amount of heat may be generated by these stoves, at any season of the year, and an impetus given to the ascending current to any extent desired.*

When all other resources for ventilation fail, the teacher should resort to the windows. These can be opened freely before and after school, and at the

* "The important points in the construction of a ventilator are, that it should, when possible, be a warm tube, and that it should open near the floor of the apartment to be ventilated. When warm, it constantly acts, from the mechanical tendency of a column of heated air to rise; whereas, if cold, it acts only when air is, by some means, forced into the room to be ventilated. In every other case, a cold ventilator is not to be relied on. A second point is, that its opening should be near the floor of the apartment, for it then carries off the stratum of air in contact with the floor, which is always the coldest, and usually the foulest in the room."—*North American Review*.

Ventilation.

recesses ; and they can be let down from the top, a few inches, during school hours, when the air of the room becomes unfit for use.

The following extract from a report prepared by a special committee of the New York Board of Education, embodies a condensed summary of nearly all the valuable results that have yet been reached on the subject of heating and ventilation :

“ That the building be warmed throughout (except the janitor's rooms, halls, and stairways) with fresh air, heated by contact with hot-water or steam pipes, or radiators, placed beneath the building ; that the quantity of such radiating surface be at least one square foot to every fifty feet of the cubical content of the portion of the building to be heated ; that if this do not amount to four square feet of radiating surface for each scholar to be accommodated in the building, then that amount be put in ; that the boilers shall be capable of boiling the water, or of generating abundant steam in the coldest weather, and the smoke-pipe shall not in any case show a temperature of above 350° ; that the draught of air into the furnace of the boiler, of water into the boiler, and of cold air into the stacks of pipes or radiators, be governed by automatic regulators ; that the boilers shall not require replenishing with fuel oftener than once in every four hours ; that the radiating surface be divided into separate stacks, one or more for each room, and that the ventilating flues be separate, with openings into the room both at the top and the bottom of the room, and equal in aggregate sectional area to the sectional area of the cold-air boxes, which shall not be less than one square foot for every hundred feet of radiating surface ; that the contractor shall give security satisfactory to the Board of Education that he will keep the apparatus in repair for five years, and that it shall in all weathers heat every portion of the house to 70° , and furnish ventilation at the rate of ten cubic feet of air per minute to each scholar to be accommodated by the building, the air to be so introduced into the rooms as to produce no unpleasant draught.”

BOOKS OF REFERENCE

FOR THE

ORAL COURSE OF INSTRUCTION.

IN conducting oral exercises on the various subjects relating to common life, teachers are often at a loss to know what sources of information are most available. The following catalogue will serve as a general guide to works of this class. The list is by no means complete; but it embraces the most useful of those which have fallen under the author's observation.

Teachers will generally derive more aid from such works as "The Science of Common Things," "First Book of Science," "Fireside Philosophy," etc., than from the more elaborate text-books prepared for the use of High Schools and Academies. By cultivating a familiarity with elementary and practical works on the different subjects to be presented, teachers will more readily adopt a style of instruction and illustration that is adapted to the wants of their classes, than by studying works which are more extended and more strictly scientific. One of the greatest dangers in giving oral lessons, is that of attempting too much. The principles of science must be drawn upon sufficiently to give the pupils a clear and satisfactory explana-

Books of Reference.

tion of most of the common phenomena around them, without attempting to exhaust the different sciences to which they relate.

ACKERMAN.—First Book of Natural History, by A. Ackerman, 12mo, pp. 286, New York.

ABBOTT.—Learning about Common Things, by Jacob Abbott, 16mo, pp. 193, New York.

BARNARD.—Object Teaching and Oral Lessons on Social Science and Common Things, with various Illustrations of the Principles and Practice of Primary Education, as adopted in the Model and Training Schools of Great Britain; republished from Barnard's American Journal of Education; 8vo, pp. 434, New York and Chicago. \$1.50.

This volume contains a reprint of several of the most valuable English works on Oral Teaching.

BEECHER.—Physiology and Calisthenics, by Catharine E. Beecher, 16mo, pp. 151, New York. 50 cts.

BROWNELL.—How to Use Globes, by F. C. Brownell, 12mo, pp. 33, New York and Chicago. 10 cts.

BATEMAN.—Third Biennial Report of the Superintendent of Public Instruction of the State of Illinois, for 1859-60, by Hon. Newton Bateman, Springfield, Illinois.

Mr. Bateman's Report embraces an article of sixteen octavo pages on object lessons; the value and use of the slate and blackboard, and of cards and charts; the best methods of cultivating habits of observation and reflection; and the relative importance of Primary Schools in a graded course of instruction.

Books of Reference.

CALKINS.—Primary Object Lessons for a Graduated Course of Development, by N. A. Calkins, 12mo, pp. 362, New York. \$1.00.

CARLL.—Child's Book of Natural History, illustrating the Animal, Vegetable, and Mineral Kingdoms, with application to the Arts, by M. M. Carll, 16mo, pp. 148, New York. 38 cts.

COWDERY.—Elementary Moral Lessons, for Schools and Families, by M. F. Cowdery, Superintendent of Public Schools, Sandusky, Ohio, 12mo, pp. 261, Philadelphia. 63 cts.

COWDERY.—Primary Moral Lessons, Part I., by M. F. Cowdery, Superintendent of Public Schools, Sandusky, Ohio, 16mo, pp. 116, Sandusky. 33 cts.

CAMP.—Annual Report of the Superintendent of Common Schools of the State of Connecticut for 1861–62, by Hon. David N. Camp.

Mr. Camp's Report contains an article of twenty-five octavo pages on Methods of Teaching, embracing Object Lessons and a Course of Study for Primary, Intermediate, and Grammar Schools.

EMERSON AND FLINT.—Manual of Agriculture, for the School, the Farm, and the Fireside, by Geo. B. Emerson and Chas. L. Flint, 12mo, pp. 306, Boston.

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Books of Reference.

GREGORY.—Catalogue of the Michigan State Teachers' Institutes, Spring Series of 1862, held under the direction of the Superintendent of Public Instruction. Pamphlet, pp. 80. Lansing, Michigan.

Fifty pages of this Catalogue are devoted to Object Lessons, Physical Education, Moral Education, Primary Teaching, and an extended Course of Study for a Graded School, by J. M. Gregory, Superintendent of Public Instruction.

Most of these articles are also embraced in Mr. Gregory's Annual Report for 1861.

HILL.—First Lessons in Geometry, by Thomas Hill, President of Antioch College, 24mo, pp. 144, Boston.

HAZEN.—Popular Technology, or Professions and Trades, by Edward Hazen, A. M., 2 vols., 16mo, pp. 536, Harper's Family Library.

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HOOKE. —Natural History for the use of Schools and Families, by Worthington Hooker, M. D., 12mo, pp. 382, New York.

HAILMAN.—Outlines of a System of Object Teaching, by William N. Hailman, 8vo, pp. 38, Louisville, Ky.

MAYO.—Manual of Elementary Instruction, by Elizabeth Mayo, 2 vols., 16mo, pp. 609, London, Home and Colonial School Society. \$2.50.

Books of Reference.

MAYO.—Lessons on Objects, by Elizabeth Mayo, 16mo, pp. 229, London. \$1.50.

An American edition of this work will soon be issued by J. B. Lippincott & Co., Philadelphia.

MAYO.—Lessons on Shells, by Elizabeth Mayo, 16mo, London. \$2.00.

MARCEL.—Language as a Means of Mental Culture and International Communication, by C. Marcel, French Consul, 2 vols., 12mo, pp. 8+1, London.

This is an elaborate and philosophical system of mental, moral, and physical culture, practically applied. The title is not well chosen.

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